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In The
Supreme Court of The United States
October Term 1997

ALBERT CAMPBELL, et al.
Petitioners,

v.

STATE OF CALIFORNIA.
Respondent.

Petition For A Writ Of Certiorari
To The United States Court of
Appeals For The Ninth Circuit

PETITION FOR WRIT OF CERTIORARI

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QUESTION PRESENTED FOR REVIEW

The question presented by this petition for writ of certiorari is whether a mandatory permanent injunction compelling the expensive remediation of off-site contamination under a complaint brought under CERCLA can be based upon summary judgment on a pendant state law public nuisance claim where the determination of causation of the off-site contamination is disputed and where the defendants have not been afforded any discovery.

LIST OF PARTIES TO THE PROCEEDINGS IN THE COURT BELOW

Appellants:

Albert Campbell and Charles Tackman, as the Executors of the Estate of Victor Muscat

Appellants Attorneys:

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State of California

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PETITION FOR WRIT OF CERTIORARI

The executors of the Victor Muscat estate respectfully pray that a writ of certiorari issue to review the judgment and opinion of the United States Court of Appeals for the Ninth Circuit entered in this proceeding on March 9, 1998, in order to resolve the important issue presented herein.

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OPINIONS BELOW

The opinion of the United States Court of Appeals for the Ninth Circuit that gives rise to this petition is published. It is reprinted in Appendix A ("Apdx. A") hereto.

The opinion of the United States District Court for the Eastern District of California which gave rise to the appeal to the Ninth Circuit is unpublished. It is reprinted in Appendix B ("Apdx. B") hereto.

STATEMENT OF JURISDICTION

On August 5, 1993, the United States District Court for the Eastern District of California issued an order granting summary judgment to plaintiff, the State of California ("the State"), on its state law claim for public nuisance, in effect finding that a public nuisance had been "maintained" by appellants, the executors of the estate of Victor Muscat, during the instant of time that certain real property held by the decedent passed through his estate into a testamentary trust. In that same order, the District Court granted a mandatory permanent injunction which incorporated an administrative order previously issued by the State which, among other things, ordered the executor appellants to remediate alleged off-site contamination at the Stanley Park subdivision which is located approximately one mile away from the estate property.

On September 7, 1993, defendants filed a notice of appeal to the United States Court of Appeals for the Ninth Circuit. The Ninth Circuit affirmed the District Court in an opinion filed on March 9, 1998. Pursuant to Supreme Court Rule 13.1, this petition has been filed within 90 days of the opinion of the Ninth Circuit. This Court has jurisdiction under 28 U.S.C. section 1254 (1993).

STATUTES INVOLVED IN THIS CASE

Chapter 103, Subchapter I, Section 106, of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. section 9606(a) (1980) provides in part:

> In addition to any other action taken by a State or local government, when the President determines that there may be an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous

> substance from a facility, he may require the Attorney General of the United States to secure such relief as may be necessary to abate such danger or threat, and the district court of the United States in the district in which the threat occurs shall have jurisdiction to grant such relief as the public interest and the equities of the case may require. The President may also, after notice to the affected State, take other action under this section including, but not limited to, issuing such orders as may be necessary to protect public health and welfare and the environment.

California Civil Code section 3479 provides:

> Anything which is injurious to health, including, but not limited to, the illegal sale of controlled substances, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin, or any public park, square, street, or highway, is a nuisance.

California Civil Code section 3480 provides:

> A public nuisance is one which affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.

STATEMENT OF THE CASE

This is a CERCLA action combined with a pendant public nuisance claim under state law. The State of California (the "State"), within only 70 days of the filing of the complaint, and without any discovery by any party, sought and obtained summary adjudication for a mandatory permanent injunction on its pendant state law public nuisance claim. The injunction ordered appellants to comply with a comprehensive administrative order previously issued by the State which required appellants as executors of an estate,

among other things, to construct a major water line to a distant subdivision to remedy the impact of groundwater contamination at the subdivision located over one mile away from the property briefly administrated by appellants.

In opposition to the State's motion, appellants offered facts and expert opinion indicating that the off-site contamination at the subdivision was not caused by contamination from the property administrated by appellants but rather was caused by contamination created at another industrial facility, Louisiana Pacific, located midway between the property administrated by appellants and the subdivision.

The District Court denied appellants any discovery, denied their request for a continuance, found liability on the public nuisance claim and issued the comprehensive mandatory permanent injunction.

The Ninth Circuit affirmed. In doing so, the Ninth Circuit held inconsistently that the facts and evidence sought

and offered by appellants which would establish another cause of the contamination off-site at the subdivision, the Louisiana Pacific Property, were "immaterial" to the state law nuisance claims yet the absence of the same evidence, *e.g.*, whether there was a disposal of contaminants on the Louisiana Pacific Property, "mandated" a conclusion that the property administrated by appellants was the cause of the contamination at the subdivision.

REASONS FOR GRANTING THE WRIT

The underlying action is in federal court because it is a CERCLA case brought by the State of California which seeks cost recovery and other relief related to soil and groundwater contamination caused by the alleged improper disposal of trichloroethylene ("TCE") at a manufacturing facility known as Victor Industries. The State of California (the "State") appended onto its federal CERCLA complaint a

state law tort claim for public nuisance by which the State sought injunctive relief. Prior to filing the complaint, the State had issued an administrative order directing appellants not only to remediate the soil and groundwater contamination at Victor Industries, but also to remediate TCE contaminated groundwater beneath a residential development known as Stanley Park, located more than one mile away from Victor Industries.

Only 70 days after filing the complaint and before appellants had filed an answer or conducted any discovery, the State filed a motion for summary adjudication on the state law tort claim of public nuisance asking the District Court to adopt verbatim the previously issued administrative order as a mandatory permanent injunction. The State's motion for summary adjudication also requested a finding that appellant's were liable as Responsible Parties under

CERCLA, but did not request judgment imposing a CERCLA injunction or for a cost recovery determination.

Due to the short period of time between the filing of the complaint and the motion for summary judgment, defendants were unable to take any discovery and were forced to defend the comprehensive summary judgment motion based only upon limited existing information available from public sources and the opinion of their expert, Jay Lucas. Mr. Lucas had previously been employed by the California Department of Health Services, Toxic Substances Control Division (predecessor to the Department of Toxic Substances Control) and was at the time of the motion employed with Brown & Caldwell Consultants who were investigating the Victor Industries site for the Victor Muscat Trust. Significantly, Mr. Lucas had not done any off-site investigation and could rely only upon incomplete data and test results and reports in the public record.

Notwithstanding the limited time and the appellants' inability to conduct any discovery whatsoever in the action, appellants submitted credible and persuasive expert testimony and opinion opposing the State's motion for summary adjudication. Appellants' expert refuted the State's proffered facts and opinion that the contamination at Victor Industries [also known as the 20th Street Property] was the source, and therefore the legal cause, of the contamination one mile away at Stanley Park. (Apdx. C.) Appellants' expert offered facts and opined that the likely cause of the contamination at Stanley Park was another industrial facility, Louisiana Pacific, which was midpoint between Victor Industries and Stanley Park. (*See* Apdx. C, *generally*, and pages C - 137-8, 151, 157, 161 *specifically*.) Appellants also moved the District Court for a continuance to allow an opportunity to gather additional evidence to further support their expert's opinion. In response, the State filed rebuttal opinions which challenged

challenged the reasonable conclusions and opinions submitted by appellants' expert. The State's rebuttal highlighted the fact that disputed issues of fact existed concerning the source, or cause, of the contamination at Stanley Park.

The District Court denied the request for a continuance, granted the State's motion for summary adjudication, and adopted verbatim the previously issued administrative order as a mandatory permanent injunction on the nuisance claim.

The Ninth Circuit affirmed, holding first that "[t]he Lucas evidence does create a dispute - or, in the words of the summary adjudication statute, an 'issue' - between the parties: Lucas's evidence suggests that the Louisiana Pacific Property contaminated the water at Stanley Park . . . ." *State of California v. Campbell*, 138 F.3d 772, 781 (9th Cir. 1998). (Apdx. A.) The Ninth Circuit then went on to erroneously hold that the facts and opinion submitted by appellants' expert

did not raise genuine issues of material fact because "[t]he cause of the trichloroethylene contamination at Stanley Park and other off-site areas is therefore immaterial to California's state law claims." *State of California v. Campbell*, 138 F.3d 772, 781 (9th Cir. 1998). (Apdx. A.) The Ninth Circuit also reiterated its opinion that causation of the Stanley Park contamination was immaterial to the nuisance claim when it upheld the District Court's denial of appellants' request for a continuance to allow additional time to obtain corroborative evidence that the Stanley Park contamination originated from the Louisiana Pacific facility:

> The undisputed evidence that trichloroethylene contaminated the soil and groundwater *at the 20th Street Property* is sufficient to establish the defendants' liability under California law. To succeed on its summary adjudication motion, California need not prove that property other than the 20th Street Property suffered from contamination. Under California law, the pollution at the 20th

> Street Property constitutes a public nuisance and violates California's environmental laws. *See Carter v. Chotiner*, 210 Cal. 288, 291, 291 P. 577 (1930) (polluted water is a public nuisance); Cal. Health & Safety Code § 25358.3 (when a release or threatened release of hazardous substances endangers the environment, those responsible may have to take remedial action). Therefore, any additional data about contamination at property other than the 20th Street Property is not relevant to oppose the summary adjudication motion.

State of California v. Campbell, 138 F.3d 772, 781 (9th Cir. 1998). (Apdx. A.)

The Ninth Circuit then issued a further internally inconsistent holding by denying appellants' challenge to the scope of the injunction. The glaring internal inconsistency is that in order to uphold the broad scope of the injunction requiring expensive remediation off-site at Stanley Park, the Ninth Circuit had to contrive a way to reject appellants'

expert's declaration which the Ninth Circuit had earlier acknowledged did create a disputed "issue." The Ninth Circuit accomplished this by finding that "no reasonable juror could conclude that the Louisiana Pacific Property, rather than the 20th Street Property [Victor Industries], was the source of the contamination at Stanley Park." *State of California v. Campbell*, 138 F.3d 772, 781 (9th Cir. 1998). (Apdx. A.) The basis for this controverted "finding" rests on the fact that at this very early stage of the litigation, and without any discovery whatsoever, there were no undisputed facts presented by appellants to show that Louisiana Pacific disposed of TCE on its property to support the appellants' expert's opinion that Louisiana Pacific was the source of the contamination at Stanley Park. That evidence, of course, was the very evidence appellants sought to obtain in moving for a continuance to conduct discovery, the discovery which the Ninth Circuit earlier in its opinion held was "immaterial" to

the State claims and did not warrant a continuance because the evidence sought was not calculated to obtain "facts essential" to resist the summary adjudication. If these facts are not "essential" to resist summary adjudication, then the absence of those very facts can not be used to reject the opinion of an otherwise qualified expert that the contamination at Stanley Park originated from the Louisiana Pacific Property.

The error of this reasoning is made more obvious by evidence submitted by the State's own expert which indicated that contamination had *not* occurred on the Victor Industries Property which evidence corroborated appellants' expert's conclusion that the Louisiana Pacific Property was the source of the contamination in Stanley Park. Attached to the Declaration of Gene Riddle, submitted by the State in support of its motion, was a report made by Environmental Strategies Corporation which was prepared for the California

Department of Health Services, Toxic Substances Control Division, Region I, in 1990. In that report, which assesses the groundwater contamination at the Victor Industries Property, Environmental Strategies Corporation concludes:

> Based on the results of the field investigation, ESC concludes that there is *no significant contamination* in the shallow unconfined groundwater or soils between depths of 5 feet and 35 feet at the former Victor Industries 20th Street site . . . .
>
> . . . ESC concludes that *no further groundwater contamination should result* from the infiltration of soil leachate to the water table.
>
> The results of this investigation contradict the earlier soil gas survey performed by WESTON, which showed TCE and PCE concentrations of up to several hundred ppb in the soil vapor phase . . . .
>
> If significant quantities of volatile organic compounds were dumped at the site as alleged by former employees, one would

> expect to find relatively high contaminant levels in the soils or groundwater. Since high levels were *not* detected during ESC's investigation, several explanations can be proposed . . . .
>
> . . . .
>
> A final explanation could be that *significant quantities of solvents were not dumped at the 20th Street site.* (emphasis added).

The Ninth Circuit's published opinion holds essentially that "causation" is not "essential" to impose a mandatory injunction to remedy an off-site public nuisance. This opinion conflicts with every other opinion which has addressed the issue. *See, e.g., Town of Orangetown v. Gorsuch,* 718 F.2d 29 (2nd Cir. 1983) (requiring an unequivocal finding of causation essential to a public nuisance claim); *Taylor Bay Protective Assoc. v. ADM'R, U.S. E.P.A.*, 884 F.2d 1073 (8th Cir. 1989) ("[T]he maintenance of

the nuisance must be the natural and proximate cause of the injury. [citations omitted]. Proximate cause is 'a cause which, in a natural and continuous sequence, *produces damage* and without which the damage would not have occurred . . . '"; *Bellflower v. Pennise*, 548 F.2d 776 (8th Cir. 1977) (". . . in order to constitute an actionable nuisance, not only must a wrongful act of the defendant be shown but also the maintenance of the nuisance must be the natural and proximate cause of the injury.") (citing 66 C.J.S. *Nuisances* § 8(b) (1950)); *Johnson v. Hospital Corp. of America*, 95 F.3d 383 (5th Cir. 1996) ("Appellants have not produced *any* evidence demonstrating a *causal* link between their alleged damages and the chemicals at the disposal sites. It is the well-accepted general rule that a defendant may not be held liable for the consequences of an alleged nuisance absent a showing that he had in fact caused the conditions complained of.") (citing 58 Am. Jur 2d, *Nuisance* § 24 (1989); *Sterling v.*

Velsicol Chemical Corp., 855 F.2d 1188 (6th Cir. 1988) (discussing the sufficiency of evidence to prove the requisite causation between a disposal of toxic chemicals and plaintiff's injuries); *Bradley v. Armstrong Rubber Co.*, 130 F.3d 168 (5th Cir. 1997) (summary judgment for defendants discussing plaintiff's failure to prove causation).

It is elementary that if the off-site contamination at Stanley Park was caused by a release of contaminants from the Louisiana Pacific Property, and not by a release at Victor Industries Property, then appellants have no duty to remediate the off-site nuisance and indeed, no ability to abate it by action taken on the Victor Industries Property.

If allowed to stand, the Ninth Circuit's opinion will allow these plaintiffs and others nationwide to circumvent the federal statutory scheme for addressing environmental contamination by invoking the jurisdiction of the federal court under CERCLA and then proceeding on pendant state law

claims of public nuisance to obtain relief not available to them under CERCLA.

Congress has specifically declined to provide the states with a right to injunctive relief under CERCLA. Rather, section 9606 of CERCLA expressly authorizes only the United States to seek injunctive relief to abate an actual or threatened release of a hazardous substance from a facility. The legislative history shows that Congress specifically declined to provide the States with standing to seek injunctive relief under CERCLA. An early Senate version of CERCLA empowered either the United States "or the State" to seek injunctive relief. That was altered through compromise such that standing was limited to the United States alone. *U.S. v. Cannon Engineering Corp.*, 720 F.Supp. 1027, 1052 (D. Mass. 1989), *aff'd*, 899 F.2d 79 (1st Cir. 1990); *McGregor v. Industrial Excess Landfill, Inc.*, 709 F.Supp 1401, 1409 (N.D. Ohio 1987), *aff'd*, 856 F.2d 39

(6th Cir. 1988); and *U.S. v. Conservation Chemical Co.*, 619 F.Supp 162, 231-232 (D.C. Mo. 1985).

More importantly, the Ninth Circuit's published opinion, if allowed to stand, will permit plaintiffs nationwide to seek to obtain onerous and expensive mandatory clean-up injunctions and to accomplish this without having to establish the requisite causal connection between the nuisance and the harm to be remedied. Requiring such a causal connection is a principle fundamental to American jurisprudence.

Certiorari is appropriate here.

CONCLUSION

For the foregoing reasons, the petition for writ of certiorari should be granted.

Respectfully submitted,

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APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

FOR PUBLICATION

UNITED STATES COURT OF APPEALS

FOR THE NINTH CIRCUIT

STATE OF CALIFORNIA, on behalf of the California Department of Toxic Substances Control, *Plaintiff-Appellee,* v. ALBERT CAMPBELL, individually and as Trustee of the Victor Muscat Testamentary Trusts and Executor of the Estate of Victor Muscat; CHARLES TACKMAN, individually and as Trustee of the Victor Muscat Testamentary Trusts and Executor of the Estate of Victor Muscat, *Defendants-Appellants,* and WESTERN RESOURCES, INC., Receiver of the Victor Muscat Testamentary Trusts, *Intervening Defendant.*	No. 93-16754 D.C. No. CV-93-00604 GEB OPINION

Appeal from the United States District Court
for the Eastern District of California

Garland E. Burrell, District Judge, Presiding

Argued and Submitted

December 9, 1997--Pasadena, California

Filed March 9, 1998

Before: James R. Browning, Harry Pregerson, and

Michael Daly Hawkins, Circuit Judges.

SUMMARY

Civil Litigation and Procedure/Appeals-Jurisdiction

The court of appeals dismissed an appeal in part. The court held that a defendant may appeal from an order granting summary adjudication to the defendant on state nuisance and environmental claims when it is part of an order granting an injunction.

For almost 20 years, workers at Victor Industries, a manufacturer of metal products in Chico, California, used trichloroethylene, a carcinogen, as a solvent and disposed of it by dumping it on the ground. The California Department of Toxic Substances tested soil and groundwater and found that trichloroethylene had contaminated the groundwater and municipal and private wells located downgradient from Victor's property. Appellee State of California filed a federal action to require appellants executors of the estate of Victor

Muscat, Victor's owners and the receiver appointed for his trust assets, to clean up the contamination and to recover the money that the State spent investigating the contamination.

The district court granted California's motion for summary adjudication of its claims under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and state nuisance and environmental laws. As a remedy for the violations of California law, the court issued an injunction that required defendants to abate the nuisance caused by the contamination. The trustees appealed.

[1]As a general rule, federal courts of appeals have jurisdiction only over final decisions of the district courts. A final decision is one that ends the litigation on the merits and leaves nothing for the court to do but to execute the judgment. An order that determines liability but not damages is not a final decision; nor is an order that adjudicates less than all claims.

[2]The district court's CERCLA order determined that the defendants were liable for California's investigation costs, but did not determine what those costs were. The state-law order resolved the nuisance and environmental claims, but left other claims unresolved. Unless the summary adjudication orders fell under an exception to the final judgment rule, the court of appeals had no jurisdiction to hear them.

[3]The small category of decisions that may be considered "final" even though they do not end the litigation includes only decisions that are conclusive, that resolve important questions separate from the merits, and that are effectively unreviewable on appeal from the final judgment in the underlying action. **[4]** The district court's summary adjudication orders were not among this small category of appealable collateral orders because they were not effectively unreviewable after final judgment.

[5]In addition, the courts of appeals can hear appeals

from interlocutory orders granting, modifying, or dissolving injunctions. [6]The district court's injunction concerned the defendants' liability under state nuisance and environmental laws, not their liability under CERCLA. [7]The court of appeals therefore had jurisdiction over the interlocutory order finding the defendants liable under state law because it was part of an order granting an injunction, but the CERCLA order fell under none of the statutory provisions that allowed for immediate interlocutory appeal.

[8]Furthermore, given criticism of pendent appellate jurisdiction, and the consequent narrow construction of the exception for "inextricably intertwined" rulings, the CERCLA order was not inextricably intertwined with the state law injunction.

[9]The court of appeals lacked jurisdiction to hear the CERCLA portion of the appeal.

[10]The defendants argued that the district court

should not have adjudicated their liability under state law without giving them more time to conduct discovery. **[11]** Litigants must submit affidavits setting forth the particular facts expected from further discovery. **[12]**The record showed that the defendants only implicitly moved for more time to conduct discovery, an adequate ground for affirmance of the district court's denial of their request for more discovery.

[13]In any event, denial of an application for additional discovery is proper when it is clear that the evidence sought was almost certainly nonexistent or was the object of pure speculation. **[14]**Given uncontroverted facts regarding trichloroethylene dumping and contamination, the evidence sought, concerning another source of groundwater contamination, was almost certainly nonexistent or was the object of pure speculation.

[15] Moreover, a party seeking a continuance for

additional discovery must show that it lacks the facts essential to resist the summary judgment motion. **[16]**The undisputed evidence that trichloroethylene contaminated the soil and groundwater was sufficient to establish liability under California law. Any additional data about contamination at other property was not relevant to oppose the summary adjudication motion. **[17]**The district court did not abuse its discretion when it denied defendants' request to stay summary adjudication and continue discovery.

[18]The defendants also argued that there were genuine issues of material fact about who polluted the groundwater at locations downgradient from company property. The relevant inquiry in a summary adjudication motion is threefold: is there a genuine issue, is that issue about a material fact, and is the moving party entitled to judgment as a matter of law.

[19]An issue of fact is genuine if the evidence is such

that a reasonable jury could return a verdict for the nonmoving party. **[20]**The testimony of the defendants' expert witness **[21]** suggested that Louisiana Pacific Property was the source of the trichloroethylene contamination. **[22]**However, given the undisputed facts of trichloroethylene use and contamination on Victor property, the only reasonable conclusion to be drawn from the expert's evidence was that the trichlorocthylene must have flowed from downgradient where it accumulated at the edge of the Louisiana Pacific Property. Accordingly, there was no genuine dispute about which property polluted the groundwater.

[23]The defendants failed to show that the parties disputed material facts. The facts pertaining to offsite pollution were not material to California's summary adjudication motion. **[24]**To state a claim under California law, it was enough that the water itself was contaminated; California did not have to prove that trichloroethylene

migrated to other areas.

[25]Unlike CERCLA, California law imposes liability on any person who maintains a nuisance-regardless of whether that person has an interest in the land. As executors of Muscat's estate and trustees over Muscat's trusts, the appellants maintained a nuisance by administering property where hazardous chemicals were polluting the water. They were therefore liable under California law regardless of whether they were owners or operators under CERCLA.

[26]The injunction that required the appellants to abate the public nuisance was not overbroad. **[27]**Furthermore, the district court independently reviewed the department's cleanup order, from which the injunction was derived, and concluded its provisions were necessary to ensure public safety.

[28]Ordinarily, an injunction should not incorporate another document by reference. **[29]**By incorporating the order into the injunction, the district court did not err. The

defendants received adequate notice that they could face contempt if they violated because it was physically attached to the injunction.

COUNSEL

Sandra Goldberg, Deputy Attorney General, Oakland, California, for plaintiff-appellee, State of California Department of Toxic Substances Control.

Dale C. Campbell, L. Burda Gilbert, Weintraub, Genshlea & Sproul, Sacramento, California, for defendants-appellants Albert Campbell and Charles Tackman, as Executors of the Estate of Victor Muscat.

Thomas H. Clarke, Jr., Susan H. Handelman, Ropers, Majeski, John & Bentley, Redwood City, California, for intervenor Western Resources, Inc.

OPINION

PREGERSON, Circuit Judge:

For almost twenty years, Victor Industries

contaminated groundwater by dumping hazardous chemicals onto the ground at its manufacturing plant. The State of California sued the defendants under state environmental and nuisance law to require them to clean up the contaminated water. California also sought reimbursement from the defendants under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601, et seq., for the money that California spent investigating the contamination.

Two of the defendants-Albert Campbell and Charles Tackman-appeal the district court's orders finding the defendants name under CERCLA and California law. Campbell and Tackman also appeal the district court's injunction requiring the defendants to clean up the contaminated water.

Because we have no jurisdiction to review the district court's interlocutory order finding the defendants liable under

CERCLA, we dismiss that portion of the appeal. We have jurisdiction over the remainder of the appeal under 28 U.S.C. § 1292(a)(1), and we affirm.

BACKGROUND

Victor Muscat owned Victor Industries until his death in 1974. From 1958 to 1984, Victor Industries manufactured metal tubes and cans at a plant on 20th Street in Chico, California ("the 20th Street Property"). For almost twenty years, workers at the plant used trichlorocthylene as a solvent and disposed of it by dumping it on the ground. Trichloroethylene is a hazardous substance that causes cancer.

During an inspection, the California Department of Toxic Substances Control ("the Department") noticed hazardous substances stored in a manner that suggested that the hazardous substances were being dumped at the 20th Street Property. The Department took several soil samples. An analysis of the samples indicated the presence of

An analysis of the samples indicated the presence of trichloroethylene and other hazardous chemicals in the soil.

Subsequent testing indicated that high concentrations of trichloroethylene and other hazardous substances were present not only in the soil but also in the groundwater at the 20th Street Property. The Department tested the groundwater in municipal and private wells that are located downgradient from the 20th Street Property and determined that trichloroethylene had contaminated that groundwater as well. One of the polluted wells was located at Stanley Park, a housing subdivision located about a mile downgradient from the 20th Street Property.

On behalf of the Department, the State of California filled a complaint in federal court to require the defendants to clean up the contamination and to recover the money that the Department had spent investigating the contamination. The complaint named as defendants the executors of Muscat's

estate and the trustees of Muscat's testamentary trusts.[1]

California moved for summary adjudication of three of its six claims: a federal environmental claim under CERCLA, 42 U.S.C. § 9601, et seq.; a state public nuisance claim under California's common law; and a state environmental claim under California's Hazardous Substance Account Act, Cal. Health & Safety Code § 25300 et seq. Specifically, California argued that the defendants were liable as a matter of law for violating both CERCLA and the state laws. As a remedy for the state law violations, California requested a permanent injunction requiring the defendants to abate the public nuisance that the trichloroethylene contamination had caused.

In opposition to California's motion, the defendants

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[1]After California filed this lawsuit, the Connecticut Superior Court, which oversaw Muscat's estate, removed the trustees and placed the trust assets into receivership. The federal court in California then substituted Western Resources, Inc., the appointed receiver, as a defendant in place of the trustees. Western Resources intervened in this appeal and filed a brief in support of the appellants' arguments.

argued that the trichloroethylene detected at Stanley Park and the other off-site locations did not come from the 20th Street Property. The culprit, the defendants argued, was property owned by Louisiana Pacific ("the Louisiana Pacific Property"), which is located about a half-mile downgradient from the 20th Street Property and about a half-mile upgradient from Stanley Park.

The district court granted California's motion in its entirety, and the defendants appealed.[2]

STANDARDS OF REVIEW

We review grants of summary adjudication motions de novo. *Amdahl Corp. v. Profit Freight Systems, Inc.*, 65 F.3d 144, 146 (9th Cir. 1995). The district court's ability to grant an injunction is reviewed de novo, but the district court's exercise of that power is reviewed for abuse of discretion.

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[2]Western Resources appealed separately. Its appeal is therefore discussed in a separate opinion, which is found at *California v. Campbell*, ___ F.3d ___ (9th Cir. 1998).

Continental Airlines, Inc. v. Intra Brokers, Inc., 24 F.3d 1099, 1102 (9th Cir. 1994).

DISCUSSION

Under California law, those responsible for polluting groundwater can be held liable for creating a public nuisance and for violating California's environmental laws. *See Carter v. Chotiner*, 210 Cal. 288, 291 (1930) (polluted water is a public nuisance); *Selma Pressure Treating Co., Inc. v. Osmose Wood Preserving Co.*, 221 Cal. App. 3d 1601, 1616-20 (1990) (any person who creates or helps create and maintain a nuisance is liable for its abatement and damages); Cal. Health & Safety Code § 25358.3 (those responsible for endangering the public's health or safety or the environment may have to take remedial action to protect the public and the environment). Under CERCLA, any person who owned or operated a facility when hazardous substances were disposed there is liable for the costs that the government incurs when it

responds to the contamination. 42 U.S.C. § 9607(a) ("any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of . . . shall be liable for . . . all costs of removal and remedial action incurred by the United States Government or a State . . . .").

The district court found that the defendants were liable under both California law and CERCLA and granted California's motion for summary adjudication. As a remedy for the defendants' violations of California law, the district court issued an injunction that requires the defendants to abate the nuisance caused by the trichloroethylene contamination.

The defendants argue that the summary adjudication was improper because they did not have enough time to discover facts that were necessary to oppose the motion and because California failed to meet the summary adjudication

standards. The defendants also argue that the injunction was improper because it is too broad and because it unlawfully incorporates a document by reference.

I. Jurisdiction

[1]Before we address these issues on the merits, we must determine that we have jurisdiction to do so. As a general rule, federal courts of appeal have jurisdiction only over final decisions of the district courts. *See* 28 U.S.C. § 1291 (granting federal appellate courts "jurisdiction of appeals from all final decisions of the district courts"). A final decision is one that "ends the litigation on the merits and leaves nothing for the court to do but execute the judgment." *Catlin v. United States*, 324 U.S. 229, 233 (1945) (citing *St. Louis I.M. & S.R.R. v. Southern Express Co.*, 108 U.S. 24, 28 (1883)). Accordingly, an order that determines liability but not damages is not a final decision, *In re Frontier Properties, Inc.*, 979 F.2d 1358, 1362 (9th Cir. 1992); nor is an order that

adjudicates less than all claims a final decision. *Chacon v. Babcock*, 640 F.2d 221, 222 (9th Cir. 1981).

[2]The orders that the appellants appeal are precisely such orders. The CERCLA order determined that the defendants were liable under CERCLA for the costs that California incurred while investigating the contamination at the 20th Street Property, but it did not determine what those costs were. The state-law order resolved the nuisance and endangerment-to-the environment claims, but left several other claims unresolved. Thus, unless the summary adjudication orders fall under an exception to the final judgment rule, we have no jurisdiction to bear them.

A. Collateral Order Doctrine

[3]The Supreme Court has recognized that "§ 1291 permits appeals not only from a final decision by which a district court disassociates itself from a case, but also from a small category of decisions that, although they do not end the

litigation, must nonetheless be considered 'final'." *Swint v. Chambers County Comm'n*, 514 U.S. 35, 42 (1995) (citing *Cohen v. Beneficial Indus. Loan Corp.*, 337 U.S. 541, 546 (1949)). This small category of decisions "includes only decisions that are conclusive, that resolve important questions separate from the merits, and that are effectively unreviewable on appeal from the final judgment in the underlying action." *Id.* (citing *Cohen*, 337 U.S. at 546).

[4]The summary adjudication orders establishing the defendants' CERCLA and state law liability are not among this small category of decisions because they do not satisfy the last factor of the test: they are not effectively unreviewable after final judgment. As the Supreme Court explained in *Swint*, "an erroneous ruling on liability may be reviewed effectively on appeal from final judgment." *Swint*, 514 U.S. at 43. Accordingly, the orders granting California's summary adjudication motions are not appealable collateral orders.

B. Statutorily-Appealable Interlocutory Orders

[5]In addition to final decisions and the small category of cases that must be considered final under the collateral order doctrine, federal appellate courts have jurisdiction over four types of interlocutory decisions. The courts of appeal can hear appeals from interlocutory orders granting, modifying, or dissolving injunctions; interlocutory orders appointing receivers or refusing orders to wind up receiverships; interlocutory orders determining the rights and liabilities of the parties to admiralty cases; and interlocutory orders that the district court certifies for immediate appeal because the orders are pivotal and debatable. *See* 28 U.S.C. § 1292.

The district court did not certify the CERCLA order or the state law order for immediate appeal, and neither order concerns receiverships or admiralty. Thus, to fall under the statutory provisions allowing immediate appeal of interlocutory orders, the summary adjudication orders must be

orders "granting, continuing, modifying, refusing or dissolving injunctions." 28 U.S.C. § 1292(a)(1).

[6]After finding the defendants liable for creating a public nuisance and violating California's environmental laws, the district court issued an injunction requiring the defendants to abate the public nuisance that the trichloroethylene contamination had caused. Although the district court found that the defendants were also liable for California's investigation costs under CERCLA, it did not issue an injunction that required the defendants to reimburse California. Thus, the injunction that the court issued concerned the defendants' liability under state nuisance and environmental laws, not their liability under CERCLA.

[7]We therefore have jurisdiction over the interlocutory order finding the defendants liable under state law because it is part of an order granting an injunction. The interlocutory order finding the defendants liable under

CERCLA, on the other hand, is not part of the order granting the injunction. The CERCLA order therefore falls under none of the statutory provisions that allow for immediate interlocutory appeal.

C. Pendent Appellate Jurisdiction

The defendants argue that the CERCLA order is nevertheless appealable because it is "inextricably intertwined" with the injunction. They invoke the doctrine of pendent appellate jurisdiction that the Supreme Court alluded to in *Swint v. Chambers County Commission*, 514 U.S. 35 (1995).

Swint was a civil rights case against the Chambers County Commission and three police officers. The police officers argued that they were entitled to qualified immunity, and the Commission argued that it was not liable because the sheriff who authorized the alleged civil rights violations was not the county's final policy-maker. The district court summarily adjudicated both parties' defenses and found that

neither party was entitled to judgment.

Both parties immediately appealed even though the district court had not issued a final judgment. The Eleventh Circuit held that it had jurisdiction over the police officers' appeal under *Mitchell v. Forsyth*, 472 U.S. 511, 530 (1985), which held that an order denying qualified immunity is immediately appealable. The Eleventh Circuit then held that it had pendent appellate jurisdiction over the Commission's claims even though the Commission's claims were not independently appealable.

The case then came before the Supreme Court. The Court agreed that the Eleventh Circuit had jurisdiction over the police officers' appeal, but held that "the Circuit Court did not thereby gain authority to review the denial of the Chambers County Commission's motion for summary judgment." *Swint*, 514 U.S. at 38. In other words, "there [was no] 'pendent party' appellate authority to take up the

Commission's case." Id.

In so holding, the Court noted that the federal courts of appeals have endorsed the doctrine of pendent jurisdiction. *Id.* at 44 n.2. The Court also acknowledged the parties' argument that § 1291's final decision requirement is designed to prevent parties from interrupting litigation by pursuing piecemeal appeals and that once litigation has already been interrupted by an authorized pretrial appeal, there is no cause to resist the economy that pendent jurisdiction promotes. *Id.* at 45.

But the Court stated that, "[t]hese arguments drift away from the statutory instructions Congress has given to control the timing of appellate proceedings." *Id.* If courts of appeals had discretion to hear "pendent" appeals, then Congress' statutory arrangement would be undermined. *Id.* at 45-48 (discussing 28 U.S.C. § 1292, which lists certain interlocutory appeals that are immediately appealable, and §

2072(c) of the Rules Enabling Act, 28 U.S.C. § 2071 et seq., which grants the Supreme Court rulemaking authority to proscribe which interlocutory orders are appealable).

Despite this strong language against pendent appellate jurisdiction, the Court left open a loophole for "inextricably intertwined" rulings. The Court stated that it "need not definitively or preemptively settle here whether or when it may be proper for a court of appeals with jurisdiction over one ruling to review, conjunctively, related rulings that are not themselves independently appealable." *Id.* at 50-51. The Court noted that the parties did "not contend that the District Court's decision to deny the Chambers County Commission's summary judgment motion was inextricably intertwined with that court's decision to deny the individual defendants' qualified immunity motions." *Id.* at 51. Nor, the Court noted, did the parties contend that "review of the former decision was necessary to ensure meaningful review of the latter." *Id.*

[8]Given the Supreme Court's criticism of pendent appellate jurisdiction, the Court's "inextricably intertwined" exception should be narrowly construed. Under such a construction, the CERCLA order is not inextricably intertwined with the injunction. As explained above, the district court granted the injunction to abate the public nuisance that was caused by the trichloroethylene contamination at the 20th Street Property. We can easily address the defendants' state law liability without discussing the defendants' CERCLA liability. Just because the same facts are involved in both issues does not make the two issues inextricably intertwined. *See Swint*, 514 U.S. 35; *United States v. Stanley*, 483 U.S. 669, 676-78 (1987); *Abney v. United States*, 431 U.S. 651, 662-63 (1977) (all holding that appellate court with interlocutory jurisdiction over one ruling lacked jurisdiction to review factually-related rulings that were not independently appealable).

[9]In sum, the interlocutory CERCLA order does not fall under the collateral order doctrine, the interlocutory-appeal statute, or the "inextricably intertwined" doctrine. We therefore lack jurisdiction to hear the CERCLA portion of this appeal. Accordingly, we will now turn to the portions of the appeal over which we do have jurisdiction: the appeal from the district court's order finding the defendants liable under state law and the appeal from the district court's order issuing an injunction against the defendants.

II. Summary Adjudication of the Defendants' Liability Under State Law

A. Sufficient Time for Discovery

[10]The defendants first argue that the district court should not have adjudicated their liability under state law without giving them more time to conduct discovery. They rely on Rule 56(f) of the Federal Rules of Civil Procedure, which states as follows:

> Should it appear from the affidavits of a party opposing the motion that the party cannot for reasons stated present by affidavit facts essential to justify the party's opposition, the court may refuse the application for judgment or may order a continuance to permit affidavits to be obtained or depositions to be taken or discovery to be had or may make such other order as is just.

District courts have "wide latitude in controlling discovery, and [their] rulings will not be overturned in the absence of a clear abuse of discretion." *Volk v. D.A. Davidson & Co.*, 816 F.2d 1406, 1416-17 (9th Cir. 1987) (quoting *Foster v. Arcata Assoc., Inc.*, 772 F.2d. 1453, 1467 (9th Cir. 1985)). Nevertheless, a district court should continue a summary judgment motion upon a good faith showing by affidavit that the continuance is needed to obtain facts essential to preclude summary judgment. *See McCormick v.*

Fund American Cos., Inc., 26 F.3d 869, 885 (9th Cir. 1994). Thus, the defendants must show (1) that they have set forth in affidavit form the specific facts that they hope to elicit from further discovery, (2) that the facts sought exist, and (3) that these sought after facts are "essential" to resist the summary judgment motion.

1. Affidavits

[11]"References in memoranda and declarations to a need for discovery do not qualify as motions under Rule 56(f)." *Brae Transp., Inc. v. Coopers & Lybrand*, 790 F.2d 1439, 1443 (9th Cir. 1986). Rather, Rule 56(f) requires litigants to submit affidavits setting forth the particular facts expected from further discovery. We have stated that "[f]ailure to comply with the requirements of Rule 56(f) is a proper ground for denying discovery and proceeding to summary judgment." *Id.*

[12]The record does not show whether the defendants

ever actually submitted affidavits setting forth the particular evidence that they had hoped to elicit from further discovery. It appears from the record that the defendants only implicitly moved for more time to conduct discovery. For instance, when addressing the defendants' request for an extension of time, the district court did not refer to any specific motion by the defendants. Instead, the district court stated that the "[d]efendants imply that they will request further time for discovery of the facts upon which plaintiff bases its motion." The defendants' apparent noncompliance with the terms of the statute provides an adequate ground for us to affirm the district court's denial of the defendants' request for more discovery. *See id.*

2. Existence of Facts Sought

[13]In any event, as we have emphasized, "[d]enial of a Rule 56(f) application is proper where it is clear that the evidence sought is almost certainly nonexistent or is the object

of pure speculation." *Terrell v. Brewer*, 935 F.2d 1015, 1018 (9th Cir. 1991).

[14]Here, the defendants wanted more time to discover the source of the groundwater contamination at Stanley Park. There is undisputed evidence, however, that workers at Victor Industries dumped trichloroethylene at the 20th Street Property for almost twenty years, that groundwater under the 20th Street Property is contaminated with trichloroethylene, that a well located between the 20th Street Property and the Louisiana Pacific Property is contaminated with trichloroethylene, that the Louisiana Pacific Property is not contaminated with trichloroethylene, and that the groundwater is flowing from the 20th Street Property toward Stanley Park. Given these uncontroverted facts, evidence that the 20th Street Property was not the source of contamination at Stanley Park is almost certainly nonexistent or is the object of pure speculation." *Id.*

3. Essentialness of Facts Sought

[15]Moreover, Rule 56(f) mandates that "the party seeking the continuance must show that it lacks the 'facts essential' to resist the summary judgment motion." *McCormick*, 26 F.3d at 885. But the facts that the defendants hope to elicit during discovery are not essential to resisting California's summary adjudication motion.

[16]The undisputed evidence that trichloroethylene contaminated the soil and groundwater *at the 20th Street Property* is sufficient to establish the defendants' liability under California law. To succeed on its summary adjudication motion, California need not prove that property other than the 20th Street Property suffered from contamination. Under California law, the pollution at the 20th Street Property constitutes a public nuisance and violates California's environmental laws. *See Carter v. Chotiner*, 210 Cal. 288, 291 (1930) (polluted water is a public nuisance); Cal. Health

& Safety Code § 25358.3 (when a release or threatened release of hazardous substances endangers the environment, those responsible may have to take remedial action). Therefore, any additional data about contamination at property other than the 20th Street Property is not relevant to oppose the summary adjudication motion. *See McCormick*, 26 F.3d at 885 (concluding that additional testimony "would have made no difference on summary judgment, because the allegedly omitted material would not have altered the total mix of information available" to the plaintiff).

[17]The defendants therefore have not satisfied the requirements of Rule 56(f). Accordingly, the district court did not abuse its discretion when it denied the defendant's request to stay summary adjudication and continue discovery.

B. Summary Adjudication Standards

[18]Next, the defendants argue that there are genuine issues of material fact about who polluted the groundwater at

Stanley Park and other off-site locations. They also argue that California is not entitled to judgment as a matter of law because the defendants were not owners or operators of the 20th Street Property. In short, the defendants believe that California failed to meet the requirements for summary adjudication.

Summary adjudication "shall be rendered forthwith if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). "By its very terms, this standard provides that the mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no genuine issue of material fact." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247-48

(1986). Thus, the relevant inquiry in a summary adjudication motion is threefold: is there a genuine issue, is that issue about a material fact, and is the moving party entitled to judgment as a matter of law.

1. Genuine Issue

[19]An issue of fact is genuine if the evidence is such that a reasonable jury could return a verdict for the nonmoving party. *Anderson*, 477 U.S. at 248. Of course, there must be "sufficient evidence favoring the nonmoving party for a jury to return a verdict for that party." *Id.* at 249 (citing *First Nat. Bank of Ariz. v. Cities Services, Co.*, 391 U.S. 253, 298-89 (1968). "If the evidence is merely colorable . . . or is not significantly probative, . . . summary judgment may be granted." *Id.* at 249-50 (citations omitted).

[20]The defendants contend that the district court erred by rejecting the testimony of Jay Lucas (their expert witness) and the contour maps that Lucas prepared. The

contour maps allegedly depict a "bull's eye" of trichloroethylene contamination radiating from the Louisiana Pacific Property. According to the defendants, Lucas's maps and testimony support an inference that the Louisiana Pacific Property was the source of the contamination detected at Stanley Park.

[21]The Lucas evidence does create a dispute--or, in the words of the summary adjudication statute, an "issue"--between the parties. Lucas's evidence suggests that the Louisiana Pacific Property contaminated the water at Stanley Park, and California's evidence suggests that the 20th Street Property contaminated the water at Stanley Park.

Merely showing that there is a dispute, however, is not enough. The defendants must show that there is a genuine dispute. This they have failed to do in the abstract, the defendants are right. A juror who accepted Lucas's maps as accurate could conclude that the contamination was

originating from the Louisiana Pacific Property and was becoming more diluted as it spread outwards. But this case does not arise in the abstract. It arises in the context of undisputed facts, many of which mandate a different interpretation of Lucas's maps: namely, that the contamination flowed "downhill" from the 20th Street Property and accumulated at the bottom of the incline, which happened to be at the edge of the Louisiana Pacific Property.

[22]Given the following facts, no reasonable juror could conclude that the Louisiana Pacific Property, rather than the 20th Street Property, was the source of the contamination at Stanley Park: (1) From 1963 to 1980, workers at Victor Industries used large quantities of trichloroethylene as a degreaser at the 20th Street Property and dumped it on the ground there; (2) scientists detected trichloroethylene contamination in the soil and in the water at the 20th Street Property; (3) water flows from higher ground to lower

ground; (4) the Louisiana Pacific Property is downgradient from the 20th Street Property; (5) a well located between the two properties -- in other words, downgradient from the 20th Street Property and upgradient from the Louisiana Pacific Property -- is contaminated with trichloroethylene; and (6) testing of various sources of contamination at the Louisiana Pacific Property revealed no trichloroethylene.[3] Thus, if Lucas's maps were accurate and there really was more trichloroethylene near the Louisiana Pacific Property than there was away from it, then the trichloroethylene must have flowed from the 20th Street Property and accumulated at the

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[3]The defendants argue that the Louisiana Pacific Property *is nor* downgradient from the 20th Street Property and that the Louisiana Pacific Property is polluted with trichloroethylene. They have failed to present any evidence to support these arguments, however. Instead, they argue that they need more time to obtain such evidence. As discussed above, this argument is not persuasive. The defendants failed to file the necessary affidavit and they failed to show that additional discovery would uncover essential facts. Thus, although the court must view genuinely-disputed facts in the light most favorable to the defendants, it must treat these unrebutted facts as true.

edge of the Louisiana Pacific Property. No other conclusion is reasonable given the undisputed facts of this case. Accordingly, there is no genuine dispute about which property polluted the water at Stanley Park and the other off-site locations.

2. Material Fact

[23]Besides failing to show a genuine dispute, the defendants fail to show that the parties dispute *material* facts. The defendants list many facts that the parties dispute, but as the defendants themselves point out, all of the disputed facts pertain to how the trichloroethylene ended up at Stanley Park and other off-site locations. As shown below, the facts pertaining to off-site pollution are not material to California's summary adjudication motion.

Substantive law determines which facts are material. *Anderson*, 477 U.S. at 248. "Only disputes over facts that might affect the outcome of the suit under the governing law

will properly preclude the entry of summary judgment. Factual disputes that are irrelevant or unnecessary will not be counted." *Id.*

The relevant substantive law here is California nuisance law and California environmental law. Under these laws, polluted water is a public nuisance, *Carter v. Chotiner*, 210 Cal. 288, 291 (1930), and any person who creates or helps create and maintain a nuisance is liable for its abatement and damages. *Selma Pressure Treating Co., Inc. v. Osmose Wood Preserving Co.*, 221 Cal. App. 3d 1601, 1619-20 (1990). Furthermore, when a release or threatened release of hazardous substances endangers the environment, those responsible may be ordered to take remedial action. Cal. Health & Safety Code § 25358.3.

[24]Thus, to state a claim under California law, California need not prove that trichloroethylene migrated from the 20th Street Property to other areas. It is enough that the

water under the 20th Street Property itself was contaminated. in other words, the polluted water at the 20th Street Property created a public nuisance and endangered the environment. The cause of the trichloroethylene contamination at Stanley Park and other off-site areas is therefore immaterial to California's state law claims.

3. Judgment as a Matter of Law

Given that there is no genuine dispute about any material fact, the defendants can defeat the summary adjudication order only if the facts do not entitle California to judgment as a matter of law. *See* Fed. R. Civ. P. 56(c) (summary judgment is appropriate when there is no genuine issue of material fact *and* the moving party is entitled to judgment as a matter of law). The defendants argue that California is not entitled to judgment as a matter of law because the defendants were not owners or operators of the 20th Street Property at the time that hazardous chemicals

were disposed there.

This argument presumably goes to the interlocutory CERCLA-liability issue, over which we have no appellate jurisdiction. As mentioned above, it is CERCLA-not state law-that imposes liability on "owners" and "operators" of facilities at which hazardous substances were dumped. 42 U.S.C. § 9607.

[25]Unlike CERCLA, California law imposes liability on any person who maintains a nuisance--regardless of whether that person has an interest in the land. *Hardin v. Sin Claire*, 115 Cal. 460, 463-64 (1896) (holding administrator of an estate liable for maintaining a nuisance even though it was the decedent who had originally created the nuisance). As executors of Muscat's estate and trustees over Muscat's trusts, the appellants maintained a nuisance by administering property where hazardous chemicals were polluting the water. Therefore, the appellants are liable under California law

regardless of whether they were owners or operators under CERCLA. Accordingly, the district court properly found that California was entitled to judgment as a matter of law on the state law claims.

California has met the requirements for summary adjudication. The district court therefore did not err when it found as a matter of law that the defendants were liable under California's nuisance and environmental laws.

III. Issuance of the Injunction

Besides contesting their liability under state law, the defendants contest the injunction that requires them to abate the public nuisance. Specifically, the defendants argue that the injunction is too broad and that it violates Rule 65(d) of the Federal Rules of Civil Procedure.

A. Breadth of Terms

[26] Although the defendants claim that the entire injunction is overbroad, they point to only two provisions that

they claim are too broad: the modification provision (which allows the State Department of Toxic Substances Control to modify an order that it issued) and the waterline provision (which requires the defendants to install a waterline to Stanley Park). The modification provision, however, is not part of the injunction,[4] and the waterline provision is moot because California has already built the waterline, *see Friends of the Earth, Inc. v. Bergland*, 576 F.2d 1377, 1379 (9th Cir. 1978) ("Where the activities' sought to be enjoined have already

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[4]Although the modification provision is part of an order that was incorporated into the injunction, the district court specifically excepted that provision from the injunction:

> If the State construes my order as incorporating [the modification provision] . . . , it seems to me that [the modification provision] . . . provides the Executive Branch with authority to engage in unilateral action. I don't think that the Executive Branch should have the authority to engage in such action ... and I have no intention of embracing such action.
>
> Any action that is before me for purposes of contempt must be on the basis of something that I have specifically ordered

occurred, and the appellate courts cannot undo what has already been done, the action is moot."). Moreover, the remaining provisions of the injunction are not overbroad.

The provisions of the injunction originate from an order that requires the defendants to clean up soil and water at the 20th Street Property and at areas up to a mile away. The order was issued by the State Department of Toxic Substances Control. The Department of Toxic Substances Control has experience removing hazardous substances from the soil and is authorized by the California Health and Safety Code to issue orders for removing or remedying releases of hazardous substances.

[27]The district court independently reviewed the provisions of the Department's order and concluded that they were necessary to ensure public safety. The defendants might believe that the provisions pertaining to the surrounding areas are too broad because the 20th Street Property was not the

source of the contamination detected at those areas. As explained above, however, the district court properly found that the 20th Street Property was the source of the off-site contamination. The district court was therefore well within its discretion when it relied on the Department's expertise and incorporated the provisions of the order into the injunction.

B. Incorporation by Reference

[28]In their final argument, the defendants contend that the district court violated, Federal Rule of Civil Procedure 65(d) by incorporating the Department's order into the injunction. Rule 65(d) provides that every order granting an injunction "shall describe in reasonable detail, and not by reference to the complaint or other document, the act or acts sought to be restrained . . . " Fed. R. Civ. P. 65(d). Ordinarily, "an injunction should not incorporate by reference another document." *Davis v. City and County of San Francisco*, 890 F.2d 1438, 1450 (9th Cir. 1989) (quoting

Henry Hope X-Ray Prods., Inc. v. Marron Carrel, Inc., 674 F.2d 1336, 1343 (9th Cir. 1982)).

We have not read Rule 65(d) so strictly as to preclude any incorporation, however. *See id.* at 1450. Instead, we have interpreted the rationale behind the incorporation-by-reference language in Rule 65(d) as a safeguard to "ensure adequate notice to defendants of the acts prohibited." *Henry Hope X-Ray*, 674 F.2d at 1343 (holding that the district court did not abuse its discretion when it failed to attach a confidential appendix to its injunctive order because the appendix was transmitted to the parties).

[29]By incorporating the order into the injunction, the district court acted consistently with the rationale of Rule 65(d). The defendants were aware of the order because it was physically attached to the injunction itself. Thus, the defendants received adequate notice that they could face contempt if they violated the order. Under these

circumstances, the district court did not err by attaching the order to the injunction.

CONCLUSION

The district court properly found the defendants liable under California's nuisance and environmental laws and property issued an injunction against the defendants. Given the interlocutory posture of this case, however, we lack appellate jurisdiction to consider whether the district court also properly found the defendants liable for California's clean-up costs under CERCLA. Accordingly, the CERCLA portion of this appeal is DISMISSED and the remaining portions of this appeal are AFFIRMED.

APPENDIX B

UNITED STATES DISTRICT COURT
FOR THE
EASTERN DISTRICT OF CALIFORNIA

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF CALIFORNIA

STATE OF CALIFORNIA, on behalf of the California Department Toxic Substances Control Plaintiff, v. ALBERT CAMPBELL, individually and Trustee of the VICTOR MUSCAT TESTAMENTARY TRUSTS) and Executor of the ESTATE OF VICTOR MUSCAT; CHARLES TACKMAN, individually and as Trustee of the VICTOR MUSCAT TESTAMENTARY TRUSTS) and Executor of the ESTATE) OF VICTOR MUSCAT, Defendants,	CV S-93-604 GEB/JFM ORDER

Plaintiff moves for partial summary judgment on three of its six claims. Its first claim seeks recovery of costs it

incurred to cleanup a release of hazardous substances under the Comprehensive Environmental Response, Liability and Compensation Act, 42 U.S.C. 9601, et seq. ("CERCLA"). Plaintiff seeks a determination that Trustees Campbell and Tackman are strictly liable as owners or operators for the release and threatened release of PCE and TCE from a factory operated by Victor Industries at 265 East 20th Street in Chico, California ("the 20th Street property"). Defendants argue that although trichloroethylene ("TCE") and perchloroethylene ("PCE") were released into the soil on the 20th Street property, plaintiff fails to prove Victor Industries caused the contamination of groundwater drinking water wells at a housing subdivision called Stanley Park, a mile downgradient from the Trust's property. Defendants claim that the Louisiana-Pacific site between the 20th Street property and Stanley Park also released PCE and TCE that may have caused the contamination. Plaintiff also moves for

entry of a permanent injunction on their second and third claims for relief. The second claim is under a new California environmental law, Health and Safety Code § 25358.3. The third claim is for public nuisance.

When defendants filed their opposition to the State's motions, they also moved to dismiss the state law claims for lack of subject matter jurisdiction. While the issue of subject matter jurisdiction has not been fully briefed at this time, plaintiff's motion, if granted would dispose of two of its state law claims. Therefore, although defendants simply refer to this issue in their briefs, delaying ruling until September 13, 1993, would render defendants, motion moot as to plaintiff's state statutory and public nuisance claims. Plaintiff's claims for clean-up of the TCE and PCE contamination at the 20th Street site, and contamination migrating from that site, are part of a single "case or controversy" within the supplemental jurisdiction of this court. Defendants' motion requests that

this court exercise its discretion to dismiss the state claims, and does not challenge the existence of subject matter jurisdiction. Therefore, defendants' subject matter jurisdiction arguments are rejected for this motion.

A. Motion for Summary Judgment on Plaintiff's CERCLA claim

It is undisputed that large quantities of PCE and TCE were used as a degreaser by Victor Industries from 1963 to 1980 and released onto the ground at the 20th Street site. TCE was found in tests of soil and soil gas and in shallow and intermediate groundwater at that location.

The potential dispute is whether plaintiff has adequately proved that the TCE contaminating the intermediate groundwater was caused by a release from the 20th Street site. Defendants assert that the Louisiana-Pacific property ("L-P") located between the 20th Street site and the housing subdivision was the source. The evidence shows that

the intermediate groundwater flows in a west-southwest direction and that wells monitoring the intermediate groundwater on the east border of the L-P property show TCE contamination. This is evidence that the intermediate groundwater is contaminated before it reaches the L-P property. Moreover, L-P conducted extensive soil and soil gas studies of the various potential contamination sources and found no TCE. Defendants argue that the burn pit on the eastern edge of the L-P property should be investigated for the presence of TCE. However CE and PCE are volatile organic compounds not likely to be found in a burn pit area, as the experts determined when conducting the initial investigation and evaluation of the L-P site.

Defendants attempt to show that L-P is the source of the TCE contamination using contour maps. However, defendants' expert used CE concentrations from various depths of water to construct a contour map of the

intermediate groundwater. Thus, defendants' experts contour maps cannot be accorded evidentiary weight.

Plaintiff has carried its burden of proving the elements of its CERCLA claim as follows:

(1) the 20th Street site is a "facility,"

(2) TCE and PCE are "hazardous substances" under CERCLA,

(3) a "release" and "threatened release" of hazardous substances from the 20th Street site into the environment has occurred and is occurring,

(4) plaintiff incurred costs for actions taken in response to the release and threatened release of hazardous substances from the 20th treet site,

(5) Campbell and Tackman, as Trustees of the Victor Muscat Testamentary Trusts and as Executors of the Estate of Victor Muscat are "owners" and were "operators" of the 20th Street site at the time of disposal of the hazardous

substances, and

(6) Campbell and Tackman are jointly and severally liable for Plaintiff's costs of responding to the release and threatened release of hazardous substances from the site.

B. Request for Permanent Injunction

Plaintiff also seeks a permanent injunction requiring Campbell and Tackman, as Trustees of the Victor Muscat Testamentary Trusts and as Executors of the Estate of Victor Muscat, to comply with its Imminent and Substantial Endangerment and Remedial Action Order ("ISE Order") for the 20th Street site, issued May 1992.[1] This order requires defendants to install a drinking water line in the Stanley Park subdivision, among other actions. Defendants have asserted

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[1]Following oral argument, Defendants submitted a proposed order which would require them to install the drinking water line and which they have argued would obviate the need for entry of a permanent injunction. However, Defendants' assurances of voluntary compliance do not prevent entry of an injunction. Securities & Exchange Com'n v. Murphy, 626 F.2d 633, 655-56 (9th Cir. 1980).

they are unable to commit Trust funds for this purpose without a authorization of the Connecticut Probate Court which oversees the Testamentary Trusts. Thus the State contends that defendants have failed and refused to comply with the ISE Order and seeks injunctive elief under both the California Hazardous Substance Account Act ("HSAA"), Cal. Health and Safety Code §§ 25300 et seq., and public nuisance law.[2] Defendants assert that their contour maps of the TCE plume and the alleged lack of complete data create a disputed issue of fact as to whether the TCE plume is an imminent and substantial endangerment or was caused by defendants. These arguments are rejected for the reasons stated above in the summary judgment discussion.

Defendants next argue that the drinking line is not

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[2]Defendants asserted in oral argument that § 25366 which bars liability for actions which were lawful before 1982 would apply to the claim under Health and Safety Code § 25358. The court need not decide this issue, as the plaintiff's public nuisance claim seeks identical relief.

necessary since they have installed Point of Entry Treatment Systems ("POETS") on any well which was found to have TCE above the Maximum Contaminant Level ("MCL") of 5.0 parts per billion for TCE in public drinking water supplies. Plaintiff argues in rebuttal that installation of the POETS is not sufficient to prevent endangerment to public health. Plaintiff points to evidence that the number of wells requiring treatment systems has increased by two a year which represents approximately a 25% increase per year. Moreover, in tracking the TCE plume, defendants' monitoring wells have found increases in TCE concentration in just one month, indicating that the quarterly monitoring of drinking water in Stanley Park is not sufficient to protect residents from exposure to levels of TCE above the MCL. Moreover, defendants' installation of the POETS does not avoid health risks because the exposure to hazardous chemicals occurs for another one to three months after detection of TCE levels

above the MCL. Furthermore, defendants do not conduct regular testing of the POETS after installation to insure that they are still effective.

Plaintiff has shown that the drinking water line is necessary to protect the health and safety of the residents of Stanley Park, that POETS are not an effective alternative, and that the plume has migrated sufficiently such that installation of the drinking water line is necessary before remediation can occur. No other equitable considerations weigh significantly into the determination. The Trustees argue that they face potential suit by the trust beneficiaries if they expend funds for the drinking water line without prior authorization by the Connecticut Probate Court, however, they fail to consider the potential health risks to residents of Stanley Park who are unknowingly exposed to levels of TCE exceeding the MCL caused by defendants failure to voluntarily comply with the State's ISE Order.

Therefore a permanent injunction is hereby issued requiring defendants to abate the public nuisance of TCE and PCE contaminated soil and groundwater at the 20th Street site and the groundwater downgradient from the site. Defendants shall abate the nuisance by complying with the State's ISE Order of May 1992 (a copy of which is attached and incorporated herein) with time limits or deadlines to apply from the date of this Order and Injunction.

IT IS SO ORDERED.

DATED: August 4, 1993

/s/ Garland E. Burrell, Jr.

GARLAND E. BURRELL, JR.

UNITED STATES DISTRICT JUDGE

BEFORE THE CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES
CONTROL

In The Matter Of:	)	Docket No. I/SE 91/92-007
Former Victor Industries	)	IMMINENT OR
Corporation	)	SUBSTANTIAL
operations at:	)	ENDANGERMENT
365 E. 20th Street	)	AND REMEDIAL
Chico, California	)	ACTION ORDER
Hazardous Waste Site	)	
	)	
Responsible Parties:	)	Health & Safety Code
	)	(Sections 25358.5(a)(1)(B),
Victor Industries	)	and 25358.3(a)(1))
Vic, Inc.	)	
Charles A. Tackman	)	
and Albert F. Campbell	)	
as trustees on behalf	)	
of the Victor Muscat	)	
Trust; CCL Industries,	)	
Inc.; and Advanced	)	
Monobloc, Inc.	)	

I. INTRODUCTION

1.1 Parties. The State Department of Toxic Substances Control (Department) issues this Imminent or Substantial Endangerment and Remedial Action Order (Order) to Victor Industries; Vic, Inc.; Charles A. Tackman and Albert F. Campbell as Trustees on behalf of the Victor Muscat Trust; CCL Industries, Inc. and Advanced Monobloc, Inc. (Responsible Parties).

1.2 Site. The Site which is the subject of this Order is located at 365 East 20th Street in Chico, California. A map of the Site is attached as Exhibit 1.

1.3 Jurisdiction. Section 25355.5(a) (1) (B) of the Health and Safety Code (H&SC) authorizes the Department to issue an Order establishing a schedule for removing or remedying a release of a hazardous substance at a site, or for correcting the conditions that threaten the release of a hazardous substance. The order includes, but is not limited to,

requiring specific dates by which the nature and extent of a release shall be determined and the site adequately characterized, a remedial action plan prepared and submitted to the Department for approval, and a removal or remedial action completed. This Order supersedes Remedial Action Order Number HSA 88/89-014.

1.3.1 Section 25358.3(a)(1) of the H&SC authorizes the Department to order any responsible party to take appropriate removal or remedial action if the Director determines that there may be an imminent or substantial endangerment to the public health or welfare or to the environment because of a release or threatened release of a hazardous substance and such removal or remedial action is necessary.

1.4 Exhibits. All Exhibits attached to this Order are incorporated herein by this reference.

II. FINDINGS AND DETERMINATIONS

2.0 Victor Industries; Vic, Inc. ; Charles A. Tackman and Albert F. Campbell as Trustees on behalf of the Victor Muscat Trust; CCL Industries, Inc. and Advanced Monobloc, Inc. are responsible persons or parties and liable persons as defined by H&SC Sections 25323.5, 25319, 25360, and 25385.1(g).

2.1 Description of Each Respondent and Connection to Site

2.1.1 Victor Industries manufactured lead and aluminum tubes and cans at 365 East 20th Street, Chico, where they operated from approximately 1958 to 1985.

Victor Industries used trichloroethylene (TCE) and perchloroethylene (PCE) for degreasing and general cleaning. Former employees have reported to the Department that these solvents were disposed of by dumping them onto the ground on the site. The employees have stated that 150 to 200

gallons of TCE were used each month the business was in operation and that these substances were disposed of on the site. It is estimated that 21,000 gallons of TCE and PCE were dumped just during the seven year period from 1963 to 1970. These disposal practices have resulted in significant soil and groundwater contamination.

2.1.2 Vic, Inc. purchased Victor Industries in October 1984. Vic, Inc. is a successor corporation to Victor Industries. Vic, Inc. is also an operator of the site because it continued to manufacture tubes and cans at the site until approximately 1985. Vic, Inc. purchased and used PCE at the site. PCE has been found in the soil and groundwater at the site.

2.1.3 The Victor Muscat Trust (Trust) is the present land owner at the Site, and also owned the site during the time that hazardous substances were disposed on the site.

2.1.4 CCL Industries, Inc. (CCL) and/or Advanced

Monobloc, Inc. purchased Victor Industries in August, 1990 from Vic, Inc., CCL and Advanced Monobloc, Inc. are successor corporations to. Victor Industries.

2.2 Site Investigations and Substances Found at the site

2.2.1 on September 15, 1984 the Department's Surveillance and Enforcement Unit inspected the Victor Industries' East 20th Street facility and advised that certain hazardous substances be removed from the Site. Samples taken from the surface near the paint shed and next to the doors on the southwest side of the manufacturing building identified concentrations of TCE, PCE, 1,1,1 TCA, and methylene chloride in the soil. During September 1985, 34 fifty-five gallon drums of excavated soil contaminated with hazardous substances listed above, 33 cubic yards of asbestos sheeting, and 21 drums of paint related material were removed from the Site.

2.2.2 During September 1989 and January 1992, soil gas samples were collected by the Department's contractor at a depth of five feet at the Site. The 1989 samples showed concentrations of TCE at, 299 micrograms per liter (ug/l) in the soil near the southwest doors of the old manufacturing building. The 1989 samples also showed concentrations of PCE at 113 ug/l near the old railroad tracks between the two buildings on the site. Former Victor Industries' employees have identified these areas as disposal areas for hazardous substances. The 1992 soil gas samples showed concentrations of both TCE and PCE in soil beneath the plant slab, where solvent degreasers used to operate. TCE concentrations exceeded 56 ug/l, and PCE exceeded 89 ug/l at this location. In addition, in December 1991 the Department collected a soil sample at the same location as the 1989 soil gas samples, which contained concentrations of TCE at 207,000 ug/l, and PCE exceeding 2500 ug/l.

2.2.3 The Victor Muscat Trust hired Brown and Caldwell consultants to perform investigations at the Site during November, 1990 pursuant to the Department's Remedial Action Order HSA 88/89-014. Brown and Caldwell installed a groundwater monitoring well, and collected groundwater samples at seven locations via the "hydropunch" method. Six of these locations were downgradient and one location was upgradient from the site. A soil sample collected at Location BC-1, at a depth of 2.5 to 3 feet showed TCE concentrations of 17,000 ug/l, and PCE concentrations of 13,000 ug/l. BC-1 is located near the door of the manufacturing building where the Department's 1989 soil gas samples were taken. As previously indicated, this location has been identified by former Victor employees as an area where hazardous substances were disposed.

Groundwater samples showed TCE concentrations of 25 ug/l at Location HP-7 (downgradient) and non detect

concentrations of TCE and PCE at Location HP-3 (upgradient) in the shallow unconfined aquifer. These samples confirm releases of hazardous substances at the site.

2.2.4 During December 1989 Vic, Inc. hired a consultant (Environmental Strategies Corporation) to install four groundwater monitoring wells and collect samples of soil and groundwater at the Site. No detectable concentrations of TCE or PCE were located upgradient, and low concentrations of TCE (1 to 6 ug/l) were found downgradient from the facility, in the upper portion of the shallow unconfined aquifer.

2.3 Health Risks of Substances Found

2.3.1 TCE and PCE are suspected human carcinogens. Exposure is by ingestion, inhalation, or direct contact. Both chemical act as a narcotic in high concentrations. PCE can cause dermatitis with prolonged skin contact. TCE in high concentrations may cause hepatocellular carcinonoma. The California drinking water maximum

contaminant level (MCL) is 5.0 parts per billion (ppb) for both PCE and TCE. A MCL is a water quality standard set by the Department of Health Services. For carcinogens in drinking water, it is based on a one-in-one-million cancer risk.

2.4 Population at Risk Drinking water supplies have been severely impacted by the disposal of TCE and PCE at the former Victor Industries facility. This includes both municipal and private drinking water supplies. Chico's water purveyor, California Water Service Company (CWS) has been required to collect water samples repeatedly from their deep wells both upgradient and downgradient from the Victor Industries facility. TCE has been detected in four municipal wells all located downgradient from the Site. One of those wells (CWS No. 51) contained concentrations of TCE at 2.5 ug/l. This well is located only four city blocks downgradient from the Site. It is a high volume pumping well (+900 gallons per minute) with a long screened intake interval. The state

maximum contaminant level (mcl) of TCE for drinking water is 5.0 ug/l. These deep wells have "drawn" the TCE from the Victor source downward into the deep aquifers that supply groundwater to the CWS wells.

During 1989 and 1991 the Department collected samples from 190 private wells, all downgradient, from the Site. A majority of these wells, 186, supply water to residences, and four supply water to Louisiana Pacific Corporation's (L-P) industrial facility. All four of the L-P wells contained TCE, and concentrations exceeded 140 ug/l in one of them. At the time these samples were collected, L-P employees were drinking the water. L-P immediately began supplying its employees with bottled water, after the Department notified L-P of its sampling results. The other 186 private wells are located in the Stanley Park subdivision, outside the Chico City limits. Of the 186 wells tested, 62 of them contained concentrations of TCE and/or PCE, 1,1,1

TCA, and DCE. Nine of these 62 impacted private wells contain concentrations of TCE exceeding the MCL of 5.0 ug/l. The residential wells in Stanley Park are relatively shallow -in depth (55 to 160 feet). The deepest wells owned by L-P and those in Stanley Park contain the highest concentrations of TCE. This is indicative that the contaminant plume in, the groundwater has traveled a long distance. The Stanley Park subdivision contains the "leading edge" of the plume, and is the furthest distance from the Victor Site (approximately one mile).

2.5 Routes of Exposure The principal exposure route is through the drinking water supply. The water supply system for the main City of Chico is interconnected and any one contaminated well can affect the entire water supply. This puts the 100,000 residents of Chico at risk if contaminated water at significant concentrations enters the water supply. The residents in the Stanley Park subdivision are at a much

greater risk, due to the fact that they are solely dependent on their private wells for drinking water. In addition, the TCE plume will spread to other water supply wells, which will likely include the Chico Mobile Country Club. This mobile home park with 180 residential hookups is directly downgradient from the plume and is one block south of the Stanley Park subdivision.

A second exposure route is through direct contact with inhalation of TCE and PCE vapors. Inhalation occurs by the volatization of TCE from contaminated water in a shower or laundry area. According to a study performed at the Lawrence Livermore Laboratory the inhalation exposure pathway from contaminated water is at least equal in risk to that of ingestion.

3.0 Conclusions of Law

3.0.1 Victor Industries, Vic, Inc., Charles A. Tackman and Albert F. Campbell as Trustees on behalf of the Victor

Muscat Trust, CCL Industries and Advanced Monobloc, Inc. are responsible parties or "liable persons," as defined by H&SC Sections 25319, 25323.5 and 25385.1(g).

3.0.2 TCE and PCE are "hazardous substances," as defined by H&SC Section 25316, and have been found at the site.

3.0.3 A "release" or threatened release of the hazardous substances TCE and PCE has occurred at or from the site, as defined by H&SC Section 25320.

3.0.4 The actual and/or threatened release of hazardous substances at the site may present an imminent and substantial endangerment to the public health or welfare or to the environment.

III. ORDER

4.0 Based on the foregoing FINDINGS AND CONCLUSIONS OF LAW, the Department hereby determines that removal and remedial action is necessary on

and off the site because there may be an imminent and substantial endangerment to the public health or welfare or to the environment. IT IS HEREBY ORDERED THAT the Responsible Parties conduct the following response activities in the manner specified herein, and in accordance with a schedule specified by the Department as follows:

4.1 ALL WORK PERFORMED UNDER THIS ORDER SHALL BE CONSISTENT WITH AND BASED ON the Comprehensive Environmental Response, and Compensation and Liability Act (CERCLA) (42 U.S.C. 9601 et seq., as amended, the National Contingency Plan (40 Code of Federal Regulations (CFR) Part 300), as amended, state laws and regulations, and other current and applicable U.S. Environmental Protection Agency (EPA) and Department guidelines and standards.

4.2 Notification of Intent to Comply. Within 15 calendar days of the effective date of this order, the

Responsible Parties shall submit a written notice of their intent to comply with the terms of this Order.

4.3 Removal Actions. The Responsible Parties shall implement the following removal actions after workplans and time schedules for such removals have been approved by the Department. The Respondents shall keep the community informed of removal actions by submitting and distributing fact sheets, after they have been approved by the Department. Workplans and time schedules for implementing the removal actions shall be submitted by the specific dates stated below.

A. Drinking Waterline Construction. A drinking waterline extension and all necessary distribution lines shall be constructed in the Stanley Park Subdivision. This distribution system for public water supplies shall include hooking up all private wells containing concentrations of TCE, PCE, and/or 1,1,1

TCA, and DCE that exceed their MCL as identified in previous Department well sampling events. In addition, to protect the residents with wells containing concentra.ions of contaminants that do not exceed their MCL's, a choice of the following two alternatives shall be made: 1) Quarterly samples shall be taken of all these private wells, or 2) All these private residences shall be hooked up to the new waterline. These actions are necessary because as the plume advances, contaminant concentrations may rise and additional private wells may be impacted. Locations of these private wells shall include, but not be limited to those wells located on Orchard, Diamond, Marian and Stanley Avenues, and Dayton Road, Harper Valley and

Shawna Lanes, Barrington and Solar Estates Drives, and Serenity Way. A workplan to implement this construction shall be submitted to the Department for review and approval within 40 days of the date of issuance of this order. Construction of the waterline shall be completed within 120 days of issuance of this Order.

B. Groundwater Extraction and Treatment. Responsible Parties shall submit a workplan to the Department for review and approval discussing different treatment technologies, and engineering and cost analysis to extract and treat contaminated groundwater onsite and/or offsite, based upon a request from the Department at a later date. A design and implementation schedule shall be submitted to

the Department for review and approval of the recommended treatment and extraction system within 120 days of the Department's approval of the engineering and cost analysis.

C. Groundwater Extraction and Treatment Evaluation Report. After four (4) months of operation of the extraction system, an evaluation report shall be prepared and submitted to the Department for review and approval. This report shall evaluate the effectiveness and capture zone of the extraction system for the removal of organic solvent constituents from groundwater. The Responsible Parties shall submit any additional reports for Department review and approval as required by the Department.

D. Responsible Parties shall undertake additional

Removal Actions if the Department determines that they are necessary for the protection of the public health or welfare or the environment. Upon request by the Department, Responsible Parties shall submit Removal Action workplan and schedule for approval by the Department. Responsible Parties shall implement the Removal Action workplan as approved by the Department in accordance with the approved schedule.

4.4 Groundwater Monitoring. The Responsible Parties shall immediately begin interim groundwater monitoring at onsite, off site and Stanley Park wells in accordance with previous site groundwater monitoring plans approved by the Department. Groundwater level measurements shall be conducted quarterly commencing the first month after the date of issuance of this order.

Groundwater sampling shall also be conducted on a quarterly basis commencing in the same month as above. Subsequent monitoring shall be conducted until the Department determines it is appropriate to terminate monitoring.

4.5 Remedial Investigation/Feasibility Study (RI/FS). A RI/FS shall be conducted for the Site. The RI/FS shall be prepared consistent with the U.S. Environmental Protection Agency's "Guidance for Conducting Remedial Investigations and Feasibility, Studies under CERCLA", October 1988 and the National Contingency Plan (40 Code of Federal Regulations (CFR) Part 300), as amended, state laws and regulations, and other current and applicable U.S. Environmental Protection Agency (EPA) and Department guidelines and standards. The purpose of the RI/FS is to assess site conditions and evaluate alternatives to the extent necessary to select a remedy. RI and FS activities shall be conducted concurrently and iteratively so that the

investigations can be completed expeditiously. The following elements of the RI/FS process and those defined by the Department in Section 4.1 of this Order shall be preliminarily defined in the initial site scoping and refined and modified as additional information is gathered throughout the RI/FS process:

A. Remedial Action objectives including applicable or relevant and appropriate requirements (ARARs).

B. Project phasing including the identification of removal actions and operable units.

4.5.1 RI/FS Workplan. Within 60 days of the effective date of this Order, Responsible Parties shall prepare and submit to the Department for review and approval, a detailed RI/FS Workplan and implementation schedule which covers all the activities necessary to conduct a complete remedial investigation and feasibility study of the Site and any offsite

areas where there is a release or threatened release of hazardous substances from the Site. The RI/FS Workplan shall include a detailed description of the tasks to be performed, information or data needed for each task, and the deliverables which will be submitted to the Department. These 13 deliverables are discussed in the remainder of this Section, with a schedule for implementation, and monthly reports. Because of the unknown nature of the Site and the iterative nature of the RI/FS, additional data requirements and analysis may be identified throughout the process. Either the Responsible Party or the Department may identify the need for additional work. The RI/FS Workplan shall include all the elements listed below.

A. Project Management Plan A Project Management Plan which describes how the project will be managed by Responsible Parties and its contractors, subcontractors, and

consultants including an organization chart with the names and titles of key personnel and a description of their individual responsibilities.

B. Scoping Document. The scoping document shall be developed in consideration of the program goal, program management principles, and expectations contained in the NCP. It shall include:

1. An Analysis and summary of the site background and the physical setting. At a minimum, the following information is required:

(a) A map of the site, description of past and current manufacturing processes if they exist, aerial photographs

and blue prints showing buildings and structures;

(b) A description of past disposal practices;

(c) A list of all hazardous substances, materials or wastes which were disposed, discharged, spilled, treated, stored, transferred, transported, handled or used at the Site, and a description of their estimated volumes, concentrations, and characteristics;

(d) Since lead was used in the production of metal tubes at the Site, it shall be explored

and analyzed as a target hazardous waste around the manufacturing facility; and

(e) A description of hazardous substance characteristics.

2. A summary of all contaminant investigations shall be made identifying the horizontal and vertical extent of contamination in soil, soil gas, and groundwater. Spatial and temporal trends shall be evaluated. Responsible Parties shall create maps showing concentration lines of contaminants in soils, soil gas, and groundwater.

C. One of the objectives of the RI shall be to determine the nature and full extent of hazardous substance contamination in the soil and groundwater at the site and from the site including off-size areas affected by

releases from the site. This shall be accomplished by collecting soil samples and installing groundwater monitoring wells in the following locations:

1. Three (3) clusters of three (3) monitoring wells each shall be installed along Park Avenue, within the boundary of the TCE plume, downgradient from the site. One (1) of the clusters shall be installed in the City right-of-way near the PG&E Substation, one (1) cluster of wells shall be installed near Park Avenue and 20th Street, and one (1) cluster of wells shall be installed two blocks further north along Park Avenue. Each of these three (3) well clusters shall have screens constructed in each of three (3) separate groundwater aquifers as follows: one well each shall be completed in the shallow unconfined zone

(approximately 20-40 feet below ground surface), one well each in the upper confined zone (approximately 90-120 feet below ground surface), and one well each in the lower confined zone (approximately 150-170 feet below ground surface).

2. Three (3) clusters of three (3) monitoring wells each shall be installed between Park Avenue and the Louisiana-Pacific facility, downgradient from the site. One of the clusters shall be installed along 21st Street. Another cluster shall be installed along 19th Street and the third shall be installed along 17th Street, all between Broadway and Salem Streets. Each of the three (3) well clusters shall have screens constructed in each of the three (3) separate groundwater aquifers as

follows: one well each shall be completed in the shallow unconfined zone, one well each shall be completed in the upper confined zone, and one well each shall be completed in the lower confined zone.

3. Two (2) additional well clusters of three (3) monitoring wells each shall be installed in the Stanley Park Subdivision, downgradient from the site. One of the well clusters shall be installed in the almond orchard, next to the furthest house north an Diamond Avenue. The other well cluster shall be installed near the intersection of Stanley Avenue and Dayton Road, at the leading edge of the plume. Each of the two (2) well clusters shall have screens constructed in each of the three (3) separate groundwater aquifers, such as those denoted in

item C1 and 2.

All wells installed as part of the Remedial Investigation shall be constructed in accordance with the Department's technical-standards for groundwater monitoring well construction. The Department shall have final approval authority over all well construction specifications and all wells shall meet the Department's minimum technical standards. The Department may require that the geology of each location be characterized by continuous coring of pilot boreholes prior to construction of monitoring wells, and, the pilot boreholes required by the Department shall be geophysically logged.

4. Determine the magnitude and probability of actual or potential harm to public health, safety

or welfare or to the environment posed by the threatened or actual release of hazardous substance from the site. This shall include, but not be limited to the collection and analysis of water samples taken from municipal and private drinking water wells in the plume.

5. Identify and evaluate appropriate response measures to prevent or minimize future releases and mitigate any releases which have already occurred.

6. Collect and evaluate the information necessary to prepare a Remedial Action Plan (RAP) in accordance with the requirements of Health & Safety Code Section 25356.1.

7. The RI workplan shall also include provisions for quarterly monitoring of all groundwater monitoring wells installed by the Responsible

Parties. At a minimum, the samples shall be analyzed for the following purgeable halocarbons:

- Trichloroethylene (TCE)
- Perchloroethylene (PCE)
- 1,1, Dichloroethylene (DCE)
- Trans 1,2 Dichloroethylene
- Cis 1,2 Dichoroethylene

The Department also reserves the right to require the Responsible Parties to analyze for any additional substances as warranted.

8. The RI workplan shall include measures to evaluate the impact of water level changes an plume migration and direction. These provisions shall include at a minimum monthly measurements of water level elevations. Responsible Parties shall provide a monthly

report providing water elevations and contour maps for each aquifer.

9. Collect soil samples on the Site to determine the extent of contamination from toxic metals including lead.

D. Field Sampling Plan. The field sampling plan shall include:

1. Sampling objectives
2. Sample location and frequency
3. Sample designation or numbering system
4. Detailed specification of sampling equipment and procedures
5. Sample handling and analysis including preservation methods, shipping requirements and holding times
6. Management plan for wastes generated

E. Quality Assurance Project Plan. The plan shall

include:

1. Project organization and responsibilities.
2. Quality assurance objectives for measurement including accuracy, precision, and method detection limits. Selection of analytical methods shall consider obtaining detection limits at or below health detection levels for environmental media.
3. Sampling procedures.
4. Sample custody procedures and documentation.
5. Field and laboratory calibration procedures.
6. analytical procedures.
7. Laboratory to be used certified pursuant to Health and Safety code Section 25198.
8. Procedures used to assess data (precision, accuracy and completeness) and corrective

actions.

9. Reporting procedure for measurement system performance and data quality.

F. Health and Safety Plan. The Health and Safety Plan shall include the following as a revised resubmittal for the next phase of activities:

1. The name of a site health and safety officer and the names of key personnel and alternates responsible for site safety and health.

2. A health and safety risk analysis for existing site conditions, and for each site task and operation.

3. Employee training assignments.

4. A description of personal protective equipment to be used by employees for each of the site tasks and operations being conducted.

5. Medical surveillance requirements.

6. A description of the frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used.

7. Site control measures.

8. Decontamination procedures.

9. Standard operating procedures for the site.

10. A contingency plan that meets the requirements of 2 9 CFR 1910.12 0 (I) (1) and (1) (2).

11. Entry procedures for confined spaces.

G. Schedule. A schedule which provides specific time frames and dates for completion of each activity and report conducted or submitted under the RI/FS Workplan including submittal of the Remedial Investigation Report, Baseline Risk Assessment and Feasibility Study Report in compliance with

paragraphs 4.7, 4.8, and 4.9 of this Order.

4.5 RI/FS Workplan Implementation. Responsible Parties shall implement the RI/FS Workplan as approved by the Department in accordance with the approved schedule.

4.6 Public Participation Plan (Community Relations). The Responsible Parties shall prepare and submit within 120 days for Department review and approval, a Public Participation Plan (PPP) which describes how, under the Order, the public and the adjoining community will be kept informed of activities conducted at the Site and how the Responsible Parties will be responding to inquiries from concerned citizens. The PPP must be developed in accordance with the H&SC Section 25356.1 et. seq. , and the Department's Public Participation Policy and Guidance Manual.

4.7 Remedial Investigation (RI) Report. The RI Report shall be prepared and submitted by Responsible Parties to the Department for review and approval in accordance with

the approved RI/FS Workplan schedule. The purpose of the RI is to collect data necessary to adequately characterize the site for the purposes of defining risks to public health and the environment and developing and evaluating effective remedial alternatives. Site characterization may be conducted in one or more phases to focus sampling efforts and increase the efficiency of the investigation. The Responsible Parties shall identify the sources of contamination and define the nature, extent, and volume of the contamination. Using this information the contaminant fate and transport shall be evaluated. The RI Report shall contain:

A. Site Physical Characteristics. Data on the physical characteristics of the site and surrounding area should be collected to the extent necessary to define potential transport pathways and receptor populations and to provide sufficient engineering data for

development and screening of remedial action alternatives. The data shall include:

1. Current and historical surface features including facility dimensions and locations (buildings, tanks, piping, etc.), surface disposal areas, fencing, property lines and utility lines, roadways and railways, drainage ditches, leached springs, surface water bodies, vegetation, topography, residences, and commercial buildings. The data may include historical photographs, past topographic surveys, operational records, and information obtained from interviews with owners, operators, local residents, and local regulatory

agencies.

2. Regional and site geology including the location and characteristics of surface water bodies, stratigraphic geologic cross-sections and fence diagrams, description of drainage patterns, surface water/groundwater relationships and water quality.

3. Characteristics and chemistries of surface soils and vadose zone.

4. Surface water hydrology including the location and characteristics of surface water bodies, description of drainage patterns, surface water/groundwater relationship and water quality.

5. Site hydrogeology including groundwater occurrence, movement,

recharge/discharge and quality and aquifer characteristics.

6. Meteorology as related to atmospheric transport and health and safety.

7. Human populations and land use of people potentially exposed.

8. Ecological information including ecosystem components and characteristics, critical habitats, and biocontamination.

B. Sources of Contamination. Contamination sources (including heavily contaminated media) shall be defined. The data shall include the source locations, type of containment, waste characteristics, and site features related to contaminant migration and human exposure.

C. Nature and Extent of Contamination.

Contaminants shall be identified and the horizontal and vertical extent of contamination shall be defined in soil, groundwater, surface water, air, biota and facilities. Spatial and temporal trends shall be evaluated. Responsible Parties shall create maps showing iso-concentration lines of contaminants in soils, soil gas, and groundwater in each aquifer.

D. Recommendations for additional Remedial Investigations. The RI Report shall include recommendations for additional remedial investigations to fully characterize the lateral and vertical extent of contamination in the soil and groundwater. A new RI sampling plan shall be submitted and a new workplan and schedule provided pursuant to paragraph 4.5.

4.8 Baseline Risk Assessment. The responsible parties shall submit a Baseline Risk Assessment Report for Department review and approval within 120 days from the submittal of the RI report. The Report shall be prepared consistent with EPA guidance: Risk Guidance for Superfund, Volume 1, Human Health Evaluation Manual, December 1989, and Risk Assessment Guidance for Superfund, Volume 2, Environmental Evaluation Manual, March 1989. The Baseline Risk Assessment Report shall include the following components:

A. Contaminant Identification. Screen characterization data to identify contaminants of concern and, if useful, "indicator chemicals" as discussed in EPA RI/FS guidance.

B. Environmental Evaluation. An ecological assessment consisting of:

1. Identification of sensitive environments

and rare, threatened, or endangered species and their habitats.

2. As appropriate, ecological investigations to assess the actual or potential effects an the environment and/or develop remediation criteria.

C. Exposure Assessment. The objectives of an exposure assessment are to identify actual or potential exposure pathways to characterize the potentially exposed populations, and to determine the extent of the exposure.

D. Toxicity Assessment. Evaluate the types of adverse health or environmental effects associated with and multiple chemical exposures; the relationship between magnitude of exposures and adverse effects; and related uncertainties such as the weight of evidence

for a chemical's potential carcinogenicity in humans.

E. Risk Characterization. Characterization of the potential risks of adverse health or environmental effects for each of the exposure scenarios derived in the exposure assessment.

4.9 Feasibility Study Report. The Feasibility Study (FS) Report shall be prepared and submitted by Responsible Parties to the Department for review and approval, in accordance with the approved RI/FS Workplan schedule. The FS Report shall summarize the results of the RI including the following:

A. Documentation of all treatability studies conducted.

B. Development of medium specific or operable unit specific remedial action objectives including ARARs.

C. Identification and screening of general response actions, remedial technologies, and process options on a medium and/or operable unit specific basis.

D. Evaluation of alternatives based on the criteria contained in the NCP and H&SC Section 25356.1 including:

1. Overall protection of human health and the environment.
2. Compliance with ARARs
3. Long term effectiveness and performance
4. Reduction of toxicity, mobility, or volume through treatment
5. Short term effectiveness
6. Implementability based administrative feasibility

7. Cost

8. State and local agency acceptance

9. Community acceptance

E. Proposed remedial actions.

4.10 Remedial Action Plan. No later than 45 days after Department approval of the FS Report, Responsible Parties shall prepare and submit to the Department for review and approval, a draft Remedial Action Plan (RAP). The draft RAP shall be consistent with the NCP and H&SC Section 25356.1 et seq. The draft RAP will be based on the approved RI/FS Reports, and shall concisely and clearly set forth:

A. Health and safety risks posed by the conditions at the site.

B. The effect of contamination or pollution levels upon present, future, and probable beneficial uses of contaminated, polluted, or threatened resources.

C. The effect of alternative remedial action measures on the reasonable availability of groundwater resources for present, future, and probable beneficial uses.

D. Site specific characteristics, including the potential for offsite migration of hazardous substances, the surface or subsurface soil, and the hydrogeologic conditions, as well as pre-existing background contamination levels.

E. Cost effectiveness of alternative remedial action measures. Land disposal shall not be deemed the most cost-effective measure merely on the basis of lower short-term cost.

F. The potential environmental impacts of alternative remedial action measures, including, but not limited to, land disposal of the untreated hazardous substances as opposed

to treatment of the hazardous substances to remove or reduce its volume, toxicity, or mobility prior to disposal.

G. A statement of reasons setting forth the basis for the removal and remedial actions selected. The statement shall include an evaluation of each proposed alternative submitted and evaluate the consistency of the removal and remedial actions proposed by the plan with the federal regulations and factors specified in subdivision (c) of H&SC Section 25356.1.

H. A schedule for implementation of all proposed remedial actions.

In conjunction with the Department, the Responsible Parties shall implement the public review process specified in H&SC Section 25356.1(d)(1) et seq.

Following the Department's review of the input obtained from the public review process, the Department will specify to the Responsible Parties changes to be made in the RAP. The Responsible Parties shall modify the document in accordance with the Department's specification and submit a final RAP within 15 days of Department's comments.

4.11 Preparation of Remedial Action Workplan and Design (RAWD). Within 90 days after Department approval of the final RAP, in accordance with H&SC Section 25356.1, Responsible Parties shall submit to the Department for review and approval a detailed RAWD describing the implementation of the final RAP containing the following elements:

A. Design criteria and final plans and specifications for facilities to be constructed.

B. Description of equipment to be used to

excavate, handle, and transport contaminated material.

C. A field sampling plan addressing sampling during implementation and to confirm achievement of the performance objectives of the RAP.

D. A transportation plan identifying routes of travel and final destination of wastes generated and disposed (if applicable).

E. An updated health and safety plan addressing the implementation activities.

F. Identification of any necessary permits and agreements.

G. An operation and maintenance plan for facilities to remain in operation after the initial construction period including a proposal for ongoing monitoring (e.g., groundwater).

H. A schedule for implementation of the remedial action.

4.12 Deed Restrictions. Responsible Parties shall sign and record deed restrictions as specified in the final RAP and approved by the Department.

4.13 Implementation of Final Remedial Action Plan. Upon Department approval of the RAWD, Responsible Parties shall implement the final RAP as approved, in accordance with the approved RAWD.

4.14 Operation and Maintenance. Responsible Parties shall be responsible for all operation and maintenance requirements in accordance with the final RAP and approved RAWD.

4.15 Changes During Implementation of the Final RAP. During the implementation of the final RAP and RAWD, the Department may specify such additions, modifications, and revisions to the RAWD as deemed

necessary to protect public health and safety or the environment or to implement the RAP.

4.16 Endangerment During Implementation. In the event that the Department determines that any circumstances or activities (whether or not pursued in compliance with this order) are creating an imminent or substantial endangerment to the health or safety of people on the Site or in the surrounding area or to the environment, the Department may order Responsible Parties to stop further implementation of this Order for such period of time as needed to abate the endangerment. Any deadline in this Order directly affected by a Stop Work Order, under this section, shall be extended for the term of the Stop Work Order.

4.17 Discontinuation of Remedial Technology. Any remedial technology employed in implementation of the final RAP shall be left in place and operated by Responsible Parties until and except to the extent that the Department authorizes

Responsible Parties in writing to discontinue, move or modify some or all of the remedial technology because Responsible Parties have met the criteria specified in the final RAP for its discontinuance or because the modifications would better achieve the goals of the final RAP.

4.18 Project Coordinator. Within 15 days of the effective date of this Order, Responsible Parties shall submit to the Department in writing the name, address, and telephone number of a Project Coordinator whose responsibilities will be to receive all notices, comments, approvals, and other communications from the Department to Responsible Parties.

4.19 Project Engineer/Geologist. The work performed pursuant to this Order shall be under the direction and supervision of a qualified professional engineer or a registered geologist in the State of California, with expertise in hazardous waste site cleanup. Within 15 calendar days of the effective date of this order, Responsible Parties must

submit: a) The name and address of the project engineer or geologist chosen by the Responsible Parties; and b) in order to demonstrate expertise in hazardous waste cleanup, the resume of the engineer or geologist, and the statement of qualifications of the consulting firm responsible for the work.

4.20 Monthly Summary Reports. Within 30 days of the effective date of this Order, and on a monthly basis thereafter, Responsible Parties shall submit a Monthly Summary Report (MSR) of its activities under the provisions of this Order. This MSR shall describe:

a) actions taken by or on behalf of Responsible Parties during the previous calendar month;

b) actions expected to be undertaken during the current calendar month; and

c) all planned activities for the next month, any requirements under this order that were not

completed, and any problems or anticipated problems in complying with this Order. The MSR shall be received by the Department by the 5th day of each month.

4.21 Quality Control/Quality Assurance (QC/QA). All sampling and analysis conducted by Responsible Parties under this Order shall be performed -- in accordance with QC/QA procedures submitted by Responsible Parties and approved by the Department pursuant to this order.

4.22 Submittals. All submittals and notifications from Responsible Parties required by this order shall be sent simultaneously to:

Mr. Val F. Siebal

Regional Administrator

Attention: Gene Riddle

Department of Toxic Substances Control

10151 Croydon Way, Suite 3

Sacramento, California 95827

William Crooks

Executive Officer

Regional Water Quality Control Board

3443 Routier Road

Sacramento, California 95827

Dr. Chester Ward

Butte County Health Department

7 County Center Drive

Oroville, California 95965

4.23 Communications All approvals and decisions of the Department made regarding submittals and notifications will be communicated to Responsible Parties in writing by the Regional Administrator, Department of Toxic Substances Control, or his/her designee. No informal advice, guidance, suggestions or comments by the Department regarding

reports, plans, specifications, schedules or any other writings by Responsible Parties shall be construed to relieve Responsible Parties of the obligation to obtain such formal approvals as may be required.

4.24 Department Review and Approval. If the Department determines that any report, plan, schedule or other document submitted for approval pursuant to this Order fails to comply with this Order or fails to protect public health or safety or the environment, the Department may:

A. Modify the document as deemed necessary and approve the document as modified or;

B. Return comments to Responsible Parties with recommended changes and a date by which Responsible Parties must submit to the Department a revised document incorporating the recommended changes or;

C. In cases where the document fails to comply

with this order, make a determination of noncompliance, pursuant to H&SC Section 25355.5(a)(2).

4.25 Liability. Nothing in this order shall constitute or be construed as a satisfaction or release from liability for any conditions or claims arising as a result of past, current or future operations of Responsible Parties. Nothing in this Order is intended or shall be construed to limit the rights of any of the parties with respect to claims arising out of or relating to the deposit or disposal at any other location of substances removed from the site. Nothing in this Order is intended or shall be construed to limit or preclude the Department from taking any action authorized by law to protect public health or safety or the environment and recovering the cost thereof. Notwithstanding compliance with the terms of this Order, Responsible Parties may be required to take further actions as are necessary to protect public health

and the environment.

4.26 Site Access. Access to the site and laboratories used for analyses of samples under this Order shall be provided at all reasonable times to employees, contractors, and consultants of the Department. Nothing in this paragraph is intended or shall be construed to limit in any way the right of entry or inspection that the Department or any other agency may otherwise have by operation of any law. The Department and its authorized representatives shall have the authority to enter and move freely about all property at the site at all reasonable times for purposes including, but not limited to: inspecting records, operating logs, sampling and analytic data, and contracts relating to this site; reviewing the progress of Responsible Parties in carrying out the terms of this Order; conducting such tests as the Department may deem necessary; and verifying the data to the Department by Responsible Parties.

4.27 Sampling, Data and Document Availability.

Responsible Parties shall permit the Department and its authorized representatives to inspect and copy all sampling, testing, monitoring or other data generated by Responsible Parties or on Responsible Parties' behalf in any way pertaining to work undertaken pursuant to this Order. Responsible Parties shall inform the Department at least 5 days in advance of all field sampling under this order, and shall allow the Department and its authorized representatives to take duplicates of any samples collected by Responsible Parties pursuant to this Order Responsible Parties shall maintain a central depository of the data, reports, and other documents prepared pursuant to this Order. All such data, reports and other documents shall be preserved by Responsible Parties for a minimum of six years after the conclusion of all activities under this order. If the Department requests that some or all of these documents be preserved for a longer period of time,

Responsible Parties shall either comply with that request or deliver the documents to the Department, or permit the Department to copy the documents prior to destruction. Responsible Parties shall notify the Department in writing, at least six months prior to destroying any documents prepared pursuant to this Order.

4.28 Government Liabilities. The State of California shall not be liable for any injuries or damages to persons or property resulting from acts or omissions by Responsible Parties, or related parties specified in paragraph 4.39 in carrying out activities pursuant to this order, nor shall the State of California be held as a party to any contract entered into by Responsible Parties or its agents in carrying out activities pursuant to this Order.

4.29 Additional Enforcement Actions. By issuance of this order, the Department does not waive the right to take any further enforcement actions.

4.30 Incorporation of Plans and Reports. All plans, schedules, reports, specifications and other documents that require Department approval and are submitted by Responsible Parties pursuant to this order are incorporated in this Order upon approval by the Department, and shall be implemented by Responsible Parties as approved. Any noncompliance with the documents incorporated in this Order, shall be deemed a failure or refusal to comply with this order.

4.31 Extension Requests. If Responsible Parties are unable to perform any activity or submit any document within the time required under this Order, Responsible Parties may, prior to expiration of the time, request an extension of the time in writing. The extension request shall include a justification for the delay. All such requests shall be in advance of the date on which the activity or document is due.

4.32 Extension Approvals. If the Department determines that good cause exists for an extension, it will

grant the request and specify a new schedule in writing. Responsible Parties shall comply with the new schedule.

4.33 Cost Recovery. Responsible Parties are liable for any and all costs, without limitation, incurred by the Department in responding to a release or threatened release of hazardous substances at or from the site, pursuant to Section 25360 of the H&SC and other applicable provisions of law. Cost recovery may also be pursued by the Department under CERCLA.

4.34 Future Costs. With respect to the Department's review of activities conducted by the Responsible Parties pursuant to this Order, the Responsible Parties shall pay all fees pursuant to the H&SC Section 25343 when such fees are due, in accordance with the provisions of the H&SC. The Department reserves any and all rights to recover any and all costs, pursuant to H&SC Section 25360 and other applicable state and federal laws, expended by it in responding to a

release or threatened release of hazardous substances at or from the site, including but not limited to oversight costs, which exceed the fees paid by the Responsible Parties under H&SC Section 25343.

4.35 Penalties and Punitive Damages for Non-compliance. Responsible Parties may be liable for penalties of up to $25,000 for each day they refuse to comply with this Order and for punitive damages up to three times the amount of any costs incurred by the Department as a result of their failure to comply, pursuant to H&SC Sections 25359 and 25367(c).

4.36 Severability. The requirements of this order are severable, and Responsible Parties shall comply with each and every provision hereof, notwithstanding the effectiveness of any other provision.

4.37 Modifications. The Department reserves the right to unilaterally modify this Order. Any modification to

this order shall be effective upon issuance and deemed incorporated in this order.

4.38 Time Periods. Unless otherwise specified, time periods begin from the effective date of this Order and "days" means calendar days. The effective date of this order is the date it is served upon you.

4.39 Parties Bound. This order applies to and is binding upon Responsible Parties, and its officers, directors, agents, employees, contractors, consultants, receivers, trustees, successors and assignees, including but not limited to, individuals, partners, and subsidiary and parent corporations, and upon any successor agency of the State of California that may have responsibility for and jurisdiction over the subject matter of this order.

Date of Issuance /s/ Val F. Siebal

Val F. Siebal
Regional Administrator
Department of Toxic Substances Control
Region 1

APPENDIX C

Relevant Evidence

JONATHAN S. LEO - BAR NO. 80307
JOSEPH J. ARMAO - BAR NO. 129577
DEBORAH A. SIVAS - BAR NO. 135446
ANN G. GRIMALDI - BAR NO. 160893
HELLER, EHRMAN, WHITE & MCAULIFFE
333 Bush Street
San Francisco, California 94104-2878
Telephone: (415) 772-6000

Attorneys for Defendants

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

STATE OF CALIFORNIA,	)	
on behalf of the California	)	No. CIV-S-93 604 GEB JFM
Department of Toxic	)	
Substances Control,	)	DECLARATION OF JAY
Plaintiff,	)	LUCAS IN SUPPORT OF
	)	DEFENDANT'S
v.	)	OPPOSITION TO
	)	MOTION FOR
ALBERT CAMPBELL,	)	SUMMARY
Individually and as	)	JUDGMENT AND
Trustee of the	)	INJUNCTIVE RELIEF
VICTOR MUSCAT	)	
TESTAMENTARY	)	
TRUSTS and Executor	)	Date: July 19, 1993

of the ESTATE OF	)	
VICTOR MUSCAT;	)	Time: 9:00 a.m.
CHARLES TACKMAN,	)	
Individually and as	)	Court: Hon. Garland E.
Trustee of the	)	Burell, Jr.
VICTOR MUSCAT	)	
TESTAMENTARY	)	
TRUST and Executor	)	
of the ESTATE OF	)	
VICTOR MUSCAT,	)	
Defendants.	)	

I, JAY LUCAS, declare as follows:

1. I am employed with the environmental engineering firm of Brown and Caldwell Consultants ("BCC"), where I function as the principal geologist and project manager on behalf of the Victor Muscat Trust (the "Trust") for the environmental investigation being conducted pursuant to the California Department of Toxic Substances Control Imminent or Substantial Endangerment and Remedial Action Order, Docket No. I/SE 91/92-007 (the "Order") in connection with the property located at 365 East 20th Street in Chico,

California (the "Property"). I offer this declaration in support of defendants' opposition to plaintiff's motion for summary judgment and injunctive relief. The matters set forth in this declaration are stated on my personal knowledge and belief and if called upon to testify, I could and would testify competently as to them.

2. I joined BCC as a senior geologist in 1989. I am currently the Environmental Services Department Manager of BCC's Sacramento, California office. In that position, my responsibilities include technical responsibility for project quality assurance and control and overall direction of staff in conducting projects. From 1986 until 1989, I was employed as an associate geologist with the Sacramento regional office of the California Department of Health Services, Toxic Substances Control Division I (predecessor to the Department of Toxic Substances Control, together collectively referred to hereinafter as the "Department"). During that time,

I reviewed and interpreted work performed by other professional geologists and consulting firms, including the groundwater investigation undertaken by Metcalf & Eddy for the Chico, California area, for which I was the Department's project manager until approximately 1988. Prior to joining the Department, I was employed from 1978 through 1986 as a geologist in the mining industry, where my principal responsibility was for investigation of geologic and hydrologic hazards and environmental conditions associated with the mining industry.

3. I hold a Bachelor of Science degree in geology from California State University at Sacramento and I completed graduate work at the Colorado School of Mines and the University of Colorado. I have been a Registered California Geologist (No. 4301) since 1986 and a California Certified Engineering Geologist (No. 1436) since 1988. I also have completed numerous short courses and seminars in

hydrology, geology and hazardous waste investigation.

4. I have served as the Trust's designated project manager for the environmental investigation of the Property since the Trust commenced this investigation in 1989. In that capacity, I have supervised the remedial investigation of soil and groundwater on the Property, as well as the installation and sampling of groundwater monitoring wells downgradient of the Property and the sampling of private residential wells in the Stanley Park Subdivision located approximately one mile southwest of the Property. I also have reviewed the results of investigative work undertaken by the Department's consultant Metcalf & Eddy, by VIC, Inc.'s consultant Environmental Strategies Corporation, by the Union Pacific Railroad Company's consultant USPCI Remedial Services, and by Louisiana-Pacific's consultant CH2M Hill. Based on this review, I am not aware of any monitoring wells installed by the Department or its consultants in connection with the

investigation of this matter.

5. BCC has investigated groundwater downgradient of the Property to a depth of approximately 200 feet below ground surface ("bgs"). The results of this investigation indicate that a complex groundwater flow regime exists in this area. Groundwater in the area of the investigation principally flows through three zones: a shallow zone (20 to 50 feet bgs), an intermediate zone (85 to 140 feet bgs) and a deep zone (150 to 180 feet bgs). These zones are illustrated on the preliminary lithologic cross-section prepared by BCC on the basis of soil boring logs from this area, a true and correct copy of which is attached hereto as Exhibit A. Exhibit A illustrates the geologic configuration of soils as one moves from the Property (on the far right side of the cross section) past the L-P facility (in the center of the cross-section) toward the Stanley Park Subdivision (on the far left end of the cross-section). Areas shaded in blue indicate the presence of

course-grained material such as sandy gravel or gravel, commonly known as aquifers. Areas shaded in purple indicate the presence of fine-grained material such as sandy silts or silts, commonly known as aquitards. In general, groundwater and contaminants move freely through the porous materials found in aquifers, but do not migrate freely through low permeability aquitards. Between the Property and the former Louisiana-Pacific ("L-P") facility, which is located approximately one-half mile southwest of the Property, aquitards separate the shallow and intermediate zones and the intermediate and deep zones. Beneath the L-P property, however, the intermediate and deep zones do not appear to be separated by an aquitard. The existing data indicates that a high vertical gradient is not present uniformly across the entire "plume" and that the hydraulic connection between the contaminant plume and water pumped from California Water Service Well No. 51 has not yet been established.

6. As part of its analysis of the groundwater regime in this area, BCC has developed preliminary groundwater contour maps for the shallow, intermediate and deep zones which show the general direction of groundwater flow in each zone. Copies of these maps are attached hereto as Exhibit B. These contour maps indicate that groundwater in the shallow and intermediate zones is flowing in a west-southwest direction. Water level measurements in the deep zone indicate that there is a divide in groundwater flow in this zone near the L-P facility. Deep zone groundwater east of the L-P site flows in an east-northeast direction, while deep zone groundwater beneath the L-P site flows in a due west direction. Based on water level data which has been developed by BCC, I conclude that pumping of municipal and other water supply wells in southeastern Chico is impacting the groundwater direction and flow rates in this area. In addition, the downward vertical gradient measured in several

areas of the investigation may be caused by pumping or intermittent pumping of supply wells. For this reason, the groundwater flow in this area presents technically complex questions which have not yet been fully resolved by the ongoing investigation.

7. BCC has now completed installation of, and one or more rounds of sampling for, all eight of the three-well clusters of groundwater monitoring wells (for a total of 24 monitoring wells) required by the Department pursuant to the Order. The preliminary results of this groundwater investigation are summarized on the map attached hereto as Exhibit C. Analytical results for samples obtained from recently installed monitoring well clusters labeled 6 and 8 on Exhibit B have not yet been received from the laboratory, but BCC expects to receive this information within the next few weeks. Groundwater samples collected by BCC from the monitoring wells in March and April 1993 demonstrate that

the groundwater throughout the shallow zone between the Property and the Stanley Park Subdivision contains very low levels of TCE, ranging from non-detectable to 1.2 parts per billion ("ppb"). These levels are well below the drinking water standard of 5.0 ppb TCE. Analytical results indicate that TCE is present in the intermediate zone at concentrations ranging from non-detectable to 78 ppb and in the deep zone at concentrations ranging from non-detectable to 23 ppb. These results also demonstrate that TCE concentrations are not continuous throughout the length of the "plume" and do not necessarily increase with depth, but rather are generally highest in the intermediate zone.

8. In addition, I am aware that a separate groundwater investigation pursuant to a different cleanup order issued by the Department is in progress at the L-P facility and that the results of this ongoing investigation reveal the presence of TCE beneath that site. Based upon the analytical results of

BCC's investigation and upon information I have received through the Metcalf & Eddy report regarding the L-P investigation, I have developed a preliminary TCE concentration contour map for the intermediate zone which is attached hereto as Exhibit D. That map demonstrates that the highest concentration of TCE discovered to date from the investigation of this area was found in a grab sample collected from the "Apiary Well" located on the L-P property, where TCE was encountered at a level (142 ppb) two to three times greater than anywhere else yet investigated. Based on the available data, it is not possible to determine from what groundwater zone this Apiary Well sample was obtained. It is my understanding that the L-P investigation is continuing and that further groundwater monitoring well data will be available in the near future.

9. In my opinion, the TCE concentration contour lines for the intermediate/deep zone beneath the L-P site are typical

of a contamination pattern that would result from a source of TCE at that site. I have reviewed the Source Evaluation Report prepared by CH2M Hill in connection with the L-P site, a true and correct copy of which is attached hereto as Exhibit E. The Source Evaluation Report Indicates that I TCE was used and stored at the former L-P facility and that solvents were stored in a 10,000-gallon underground tank which was connected by pipeline to a leaking spigot that required repeated replacement. The report also indicates that used solvent was disposed of between the main building and the paint shed. Based upon these statements and the existing analytical data, it is my opinion that former operations on the L-P site cannot be eliminated at this time as a potential primary source of TCE contamination found beneath and downgradient of the L-P site. For this reason, BCC has received permission from L-P to resample the Apiary Well as part of its continuing investigation and will be commencing

this work within the next few weeks. BCC intends to obtain discrete water samples from each of the different groundwater zones in which the Apiary Well is screened. This additional data, together with the further analytical results anticipated from the L-P investigation, may assist in identifying the source of the TCE contamination beneath the L-P site. Depending upon the results of this sampling, additional investigation in this area may or may not be warranted.

10. With respect to the Property itself, BCC and other consultants have undertaken a limited investigation of groundwater. TCE and other solvent concentrations in the shallow zone beneath the Property are relatively low and do not, by themselves, suggest a localized source of TCE contamination. Other than limited HydroPunch data, which is non-repeatable and designed primarily as a reconnaissance tool, I am not aware of any intermediate or deep zone groundwater monitoring well data from the Property or

immediately upgradient of the Property. In my opinion, the absence of monitoring well data for the intermediate and deep zones in the immediate vicinity of the Property, when coupled with the uncertainty raised by the groundwater data from the L-P facility and groundwater gradient reversals near the L-P site, raises unanswered questions regarding the extent to which the Property is the source of downgradient TCE contamination in the intermediate and deep groundwater zones.

11. Upon completion of the groundwater investigation, BCC will prepare a Remedial Investigation Report which is intended to summarize the data developed during this phase of work and to assist in defining the nature, extent and source of the contamination. I currently anticipate that this report will be completed within the next two to three months. Until the groundwater investigation is completed and all of the resulting data is analyzed, in my opinion it is not

possible to develop a technically defensible hypothesis or conclusion regarding the source or migration of TCE contamination discovered during BCC's and others I investigation of this matter.

12. Based upon my familiarity with the Order and my communications with the Department's project manager, it is my conclusion that the Trust has taken the necessary steps to remain in compliance with the Order, except with respect to commencement of the actual construction of the drinking water line to the Stanley Park Subdivision, where there are approximately 184 private residential water wells. I am aware that the private wells in this neighborhood have been systematically sampled on three occasions, once by the Department's consultant Metcalf & Eddy in 1991 and twice by BCC in July 1992 and again in April and May 1993. Following the July 1992 sampling event, the Trust installed point-of-entry-treatment-systems ("POETS") on all ten of the

Stanley Park residential wells where TCE concentrations exceeded the maximum contaminant level ("MCL") of 5.0 ppb for that constituent and has authorized BCC to maintain these POETS in effective working order. The POETS treat all water entering the affected homes, and subsequent confirmatory sampling by BCC of water from these ten wells after it passes through the POETS has demonstrated that TCE concentrations are reduced to non-detectable levels. The analytical results from the latest sampling event are summarized, along with results from the two previous sampling events, in the chart attached hereto as Exhibit F. BCC is currently preparing a cover report for submittal of these results to the Department. The most recent Stanley Park sampling results indicate that TCE concentrations have remained relatively unchanged since the first sampling by Metcalf & Eddy in 1991. Only two additional wells showed TCE concentrations in excess of the MCL and the Trust has

authorized BCC to install POETS on those two wells. BCC is in the process of contacting these well owners and completing this task. In addition, BCC conducts quarterly sampling of four wells located on Marian Avenue in the Stanley Park neighborhood. These wells were selected for more frequent sampling because they are believed to be on the leading edge of a contamination plume in this area and, therefore, provide appropriate indicators of contaminant migration. TCE concentrations in these four wells also has remained relatively unchanged since 1991.

13. In my opinion, the selection of a final remedy for the groundwater contamination in the vicinity of the Stanley Park Subdivision is premature because the remedial investigation has not been completed and because the impact of the remediation system proposed by L-P in connection with its separate investigation should be taken into account in designing the final remedy for this downgradient area. For

example, if L-P installs an extraction and treatment system upgradient of the Stanley Park Subdivision in the intermediate zone, I believe it is likely that further migration of TCE contamination will be substantially slowed or stopped. This impact will, in turn, partially dictate the appropriateness of various potential remediation approaches to the contamination in the Stanley Park area. In addition, the Department has ordered the Trust to perform a baseline risk assessment to assist in selection of the remedy. This risk assessment, which will be based on the results of the remedial investigation after those results are analyzed, will also be a significant factor in the selection of a final cleanup remedy. The installation of a permanent drinking water line to the Stanley Park Subdivision may or may not be warranted in this case, based on the foregoing and other considerations. In my experience, the Department's order to install a permanent drinking water system as an interim removal action is highly unusual and out

of the ordinary course for an investigation of this type, especially where, as here, potentially affected wells are being sampled and POETS are being installed as necessary to avoid human exposure to contaminant concentrations in excess of the MCL The installation of a very expensive permanent drinking water system normally and more appropriately would be considered at the remedy selection stage.

14. To date, BCC's services in connection with the environmental investigation of the Property and adjacent areas necessary to comply with the Department's Order have a billed value of approximately $ 800,000. The Trust has paid all outstanding bills from BCC for this work.

I declare under penalty of perjury under the laws of the State of California and the United States of America that the foregoing is true and correct.

Date: July 6, 1993 /s/ Jay Lucas

JAY LUCAS

JONATHAN S. LEO - BAR NO. 80307
JOSEPH J. ARMAO - BAR NO. 129577
DEBORAH A. SIVAS - BAR NO. 135446
ANN G. GRIMALDI - BAR NO. 160893
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San Francisco, California 94104-2878
Telephone: (415) 772-6000

Attorneys for Defendants

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

STATE OF CALIFORNIA, on behalf of the California Department of Toxic Substances Control, Plaintiff,	)	No. CIV-S-93 604 GEB JFM
	)	SUPPLEMENTAL DECLARATION OF JAY LUCAS IN SUPPORT OF DEFENDANT'S OPPOSITION TO MOTION FOR SUMMARY JUDGMENT AND INJUNCTIVE RELIEF
v.	)	
ALBERT CAMPBELL, Individually and as Trustee of the VICTOR MUSCAT TESTAMENTARY TRUSTS and Executor	)	Date: July 26, 1993

of the ESTATE OF	)	
VICTOR MUSCAT;	)	Time: 1:30 p.m.
CHARLES TACKMAN,	)	
Individually and as	)	Court: Hon. Garland E.
Trustee of the	)	Burell, Jr.
VICTOR MUSCAT	)	
TESTAMENTARY	)	
TRUST and Executor	)	
of the ESTATE OF	)	
VICTOR MUSCAT,	)	
Defendants.	)	

I, JAY LUCAS, declare as follows:

1. I am employed with the environmental engineering firm of Brown and Caldwell Consultants ("BCC"), where I function as the principal geologist and project manager on behalf of the Victor Muscat Trust (the "Trust") for the environmental investigation being conducted pursuant to the California Department of Toxic Substances Control Imminent or Substantial Endangerment and Remedial Action Order, Docket No. I/SE 91/92-007 (the "Order") in connection with the property located at 365 East 20th Street in Chico,

California ("Victor Industries Property"). I offer this declaration in support of defendants' supplemental opposition to plaintiff's motion for summary judgment and injunctive relief. The matters set forth in this declaration are stated on my personal knowledge and belief and if called upon to testify, I could and would testify competently as to them.

2. I joined BCC as a senior geologist in 1989. I am currently the Environmental Services Department Manager of BCC's Sacramento, California office. In that position, my responsibilities include technical responsibility for project quality assurance and control and overall direction of staff in conducting projects. From 1986 until 1989, I was employed as an associate engineering geologist with the Sacramento regional office of the California Department of Health Services, Toxic Substances Control Division (predecessor to the Department of Toxic Substances Control, together collectively referred to hereinafter as the "Department").

During that time, I reviewed and interpreted work performed by other professional geologists and consulting firms, including the groundwater investigation undertaken by Metcalf & Eddy for the Chico, California area, for which I was the Department's project manager until approximately 1988. Prior to joining the Department, I was employed from 1978 through 1986 as a geologist in the mining industry, where my principal responsibility was for investigation of I geologic and hydrologic hazards and environmental conditions associated with the mining industry.

3. I hold a Bachelor of Science degree in geology from California State University at Sacramento and I completed graduate work at the Colorado School of Mines and the University of Colorado. I have been a Registered California Geologist (No. 4301) since 1986 and a California Certified Engineering Geologist (No. 1436) since 1988. I also have completed numerous short courses and seminars in

hydrology, geology and hazardous waste investigation.

4. I have served as the Trust's designated project manager for the environmental investigation of the Victor Industries Property since the Trust commenced this investigation in 1989 and, in that capacity, have supervised BCC's remedial investigation of soil and groundwater on and downgradient of the property. In connection with this investigation, BCC periodically reviews results of investigative work undertaken by other parties in the vicinity of the Victor Industries Property as those results bear on BCC's ongoing investigation. Although I have previously reviewed some of the activities undertaken by CH2M Hill in connection with the investigation of the Louisiana-Pacific ("L-P") facility southwest of Victor Industries, that review has not focused on or included all of the analytical results obtained with respect to the L-P site.

5. In response to the Department's motion for partial

summary judgment and injunctive relief, in which the State of California requested an express judicial finding that the Victor Industries Property caused the contamination discovered in the Stanley Park Subdivision, I reviewed the information provided in CH2M Hill's April 1990 Source Evaluation Report for the L-P site and in Metcalf & Eddy's June 30, 1992 Phase III Remedial Investigations Report for the Chico area. Based upon the information contained in these reports and my knowledge of BCC's ongoing investigation, I developed potential concentration contour lines and concluded that one technically plausible and defensible interpretation of the existing data is that the L-P facility is or was a potential source of trichloroethylene ("TCE") contamination in groundwater beneath the L-P facility and downgradient of that facility.

6. At the time I completed my first declaration, much of the information now attached to the Declaration of Fernando Amador ("Amador Decl.") and the supplemental

Declaration of Gene Riddle ("Supp. Riddle Decl.") in support of the Department's reply had not been provided to or reviewed by BCC. I have now reviewed the State of California's reply brief and the new information submitted by the Department with respect to the L-P facility in as much detail as possible given the short deadlines provided by these proceedings and the excerpted nature of some of the attached reports. The statements and opinions set forth below are based on this necessarily truncated review process. In the normal course of conducting this type of technically complex groundwater investigation, BCC would not, and in this case does not, anticipate completing a thorough review and evaluation of sources, migration pathways or final remedial strategies until completion of the ongoing site investigations. The investigations in connection with both the Victor Industries Property and the L-P site are still in progress. For this reason, I do not believe that any final conclusions about

these matters should or properly can be drawn at this time.

7. Based on my review of Metcalf & Eddy's Phase III Remedial Investigations Report and on my conversations with Gene Riddle, the Department's current project manager for this matter, it is my understanding that the Department's working theory with respect to the alleged migration of TCE contamination from the Victory Industries Property downgradient to the Stanley Park Subdivision is that the TCE is behaving as a dense non-aqueous phase liquid ("DNAPL") which has moved vertically downward to the intermediate groundwater zone beneath the Property and has travelled as a "slug" of contamination, which is now centered beneath the L-P facility. See Exhibit J to Declaration of Gene Riddle in Support of Plaintiff's Motion ("Riddle Decl.") at 5-1. The theory of DNAPL behavior and transport posits that some portion of the contamination does not solubilize and move with the groundwater, but instead moves mostly vertically in

undissolved form under the influence of gravity. Whether such a DNAPL phenomenon has actually occurred appears to depend on various site conditions and other factors, including the concentration of the contaminant at the time of a disposal, as well as depth to groundwater, precipitation, evaporation and site geology. At present, I am not aware of any available information relating to the concentration of the TCE allegedly disposed of at the Victor Industries Property.

8. If the Department's DNAPL theory is correct with respect to the Victor Industries Property, I would expect to see significantly higher residual TCE levels in soil and in groundwater, particularly shallow groundwater, because the DNAPL would tend to pool on low permeable sediments such as exist at the bottom of the shallow aquifer in the vicinity of the alleged disposal area. Substantial soil and shallow groundwater investigations conducted at the Victor Industries Property, which show only low levels of TCE contamination,

do not particularly support the Department's theory of DNAPL behavior or the existence of a continuing source of contamination to groundwater on the property. It is my opinion that the Hydropunch sample data collected by Metcalf & Eddy beneath the Victor Industries Property does not necessarily represent the groundwater in the intermediate zone in this location because the deepest Hydropunch appears to have sampled only the bottom of the aquitard between the shallow and intermediate zones or the very top finer sediments of the intermediate zone aquifer. Therefore, in my opinion, the data collected from the soil and shallow and intermediate groundwater investigation conducted to date on and beneath the Victor Industries Property does not tend to support the Department's DNAPL theory.

9. If DNAPL transport did not occur at this site, but rather, the many gallons of TCE mixture allegedly released at the Victor Industries Property over a period of twenty to

twenty-five years migrated downgradient continuously as soluble contaminants, then an alternative theory of transport is necessary to explain why the highest concentrations of TCE detected in groundwater to date in connection with this investigation exist in the intermediate and deep zone beneath the L-P site, while concentrations in the shallow zone are very low or non-detect. To the best of my knowledge, the Department has not articulated such an alternative theory.

10. One possible alternative explanation is that the L-P property is itself a source of TCE contamination in the groundwater. The contour map attached as Exhibit D to my first declaration in support of defendants' opposition was constructed from the limited existing data available for the intermediate and deep groundwater beneath the L-P facility, where these two zones appear to merge, and graphically illustrates this technically plausible theory of contaminant source and migration. While I agree with Richard McJunkin

of the Department that samples obtained from production well's at the L-P site provide functionally limited data, proper depth monitoring wells have not yet been installed by L-P to further investigate the TCE readings detected beneath its site. Therefore, BCC produced its contour map for the L-P property based on the best available data at this time, and I believe this map provides a useful and defensible exercise by graphically presenting one legitimate interpretation of this limited data.

11. The alternative contour maps sketched and attached as Exhibits 1 through 3 to the Declaration of Richard McJunkin in support of plaintiff's reply ("McJunkin Decl.") do not follow the generally accepted rules for contouring such data. Specifically, it is desirable to contour data which represents as narrow a time span as possible. The shallow groundwater contour map prepared by Mr. McJunkin combines data from 1990, 1991 and 1993, even though more

recent and comparable data is available in reports submitted to the Department by BCC. The contours shown on the exhibit maps attached to the McJunkin Decl. do not follow the principles of linear interpolation, and several contour lines are misleading. For example, the 1.0 ppb contour line for the shallow zone depicted in Exhibit 1 should be closed on the L-P side of monitoring well VMW-7, since VMW-7 contains less than 1.0 ppb TCE. Similarly, the 50.0 ppb contour line for the intermediate zone depicted in Exhibit 2 incorrectly extends to a value of 19.0 ppb at VMW-7b. The deep zone contour map depicted in Exhibit 3 shows a closed contour upgradient of the Victor Industries Property, indicating that deep zone contamination exists and begins beneath Victor Industries. However, no data from the deep zone beneath or upgradient of the Victor Industries Properties exists and, therefore, Mr. McJunkin's graphic interpretation that the deep zone in this area is contaminated in inaccurate. In

addition, the 5.0 and 10.0 ppb contour lines on Exhibit are not closed, even though data is shown which supports closing these contours. I have contoured the data as presented on Exhibits 1, 2 and 3 attached to the McJunkin Decl. with stricter adherence to the acceptable practices for linear interpolation. Those maps are attached hereto as Exhibit A and I believe they constitute a more accurate representation of the data.

12. BCC's use of limited data to draw tentative contour lines is similar, in my view, to the Department's reliance on limited existing Hydropunch data for the intermediate zone beneath the Victor Industries Property to conclude that this zone is substantially contaminated with TCE, even though there is no representative groundwater monitoring well data for the intermediate zone in this location. In my opinion, both situations highlight the existence of data gaps and uncertainties and point out the need for additional

investigation. Based on a recent conversation with the Department's Fernando Amador, I understand that L-P is now planning to install deeper zone groundwater monitoring wells on its property.

13. Within the limited time provided by these proceedings, I have reviewed the additional data provided by the State of California for various soil and groundwater investigations conducted on the L-P property and the Department conclusions from such data. Although there is insufficient time to undertake a comprehensive analysis of this data or to review portions of the various reports prepared by CH2M Hill or Metcalf & Eddy that appear to be omitted from the Department's supporting declarations, I am able to make the following tentative observations:

a. The geology beneath the L-P site is not well characterized or understood because continuous core soil borings generally have not been completed for the soil and

groundwater investigations at this facility. Based on my review of the reports, it is my understanding that soil analysis have been obtained primarily from grab and composite sampling at the property from shallow test pits or areas where a backhoe was used. In my opinion, a better understanding of the site geology than is provided in the Amador Decl., the Supp. Riddle Decl. and the exhibits thereto is necessary before conclusions regarding the transport of contaminants beneath suspected source areas can be drawn.

b. The Source Evaluation Report for the L-P facility, at page 2-9, indicates that TCE was used at the site, but it does not provide any indication of how, where, or when such TCE use occurred or how this material was disposed of. The Department apparently believes that solvent disposal would have occurred only in the vicinity of the Finished Wood Products Division ("FWPD") building, but there is no TCE-specific information or documentation in the reports submitted

to the Court to substantiate that conclusion. It is noteworthy that the solvent tetrachloroethylene ("PCE"), which under certain conditions degrades to TCE, was detected in and around the FWPD building and elsewhere on the L-P site even though it was not considered a "target" chemical based on historical site information. This unanticipated discovery indicates that records and interviews regarding former chemical use or disposal on the L-P site, to the extent they exist, do not appear to be complete. Therefore, the absence of such records or interviews with respect to TCE usage or disposal does not necessarily confirm the lack of a source on the site. It is my opinion that appropriate soil investigation in areas where TCE exists in shallow or deeper groundwater should be pursued in order to identify or rule out potential local sources.

c. The information provided by the State with respect to the soil gas investigation at the FWPD area of the

L-P site does not show the location of the soil gas samples with respect to the suspected TCE disposal areas. Without this information, conclusions as to the adequacy of the soil gas investigation in the FWPD area cannot be drawn.

d. The actual soil sampling investigation at the L-P site -- as opposed to the less reliable soil gas analysis undertake in the FWPD area -- does not appear to have been either "extensive" as claimed in the Amador Decl. and the Supp. Riddle Decl. or to have followed accepted sampling protocol for volatile organic compounds. For example, limited soil sampling in the vicinity of the FWPD building did not involve collection of discrete soil samples from depth through drilled soil borings, but instead apparently relied solely upon composite and grab samples obtained with the use of a backhoe or from a "test pit " Supp. Riddle Decl. at ¶ 7. Composite sampling for volatile organic compounds such as TCE is generally not appropriate due to the potential for

volatilization of target constituents during the sampling and compositing process.

e. The TCE soil investigation conducted by L-P elsewhere on the site did not cover all potential waste disposal areas identified on that property. Many of the areas where wastes were disposed of and where other constituents were found, including, for example, the Normal Avenue Burn Dump and the South Orchard Burn Dump, were simply not sampled for TCE. The Normal Avenue Burn Dump is located in the vicinity of BCC I s monitoring wells VMW-10b and VMW-10c and L-P's shallow monitoring well MW-2-BKNA, where TCE contamination has been detected. See Exhibit B to Supp. Riddle Decl. at Appendix C (Target Chemical Lists). Additionally, there was no TCE soil sampling and analysis conducted in certain suspect interior portions of the L-P facility, such as near the Engineering Department, where solvents were thought to have been used, or in the area of the

concrete impoundment next to the Millworks Division, where very large concentrations of pentachlorophenol were apparently discharged and where TCE has been detected in the shallow groundwater at monitoring well MW-5-MDCI.

f. Another example of inadequate TCE source evaluation can be seen from reviewing L-P's "Figure 6 - Water-Table Aquifer Selected Organic Chemistry Summary, May 1993," which is attached as Exhibit B to the Amador Decl. That map reveals that the groundwater sampling detection limit of 1.0 ppb utilized by L-P is substantially higher than that utilized by BCC for the upgradient and downgradient investigation. The detection limit utilized by BCC was 0.1 ppb TCE. If a 1.0 ppb detection level were utilized for BCC's ongoing investigation, shallow wells VMW-7a, VMW-6a, VMW-8a, VMW-11a and, during some sampling events, VMW-9a would be considered non-detect, as would intermediate monitoring well VMW-11b. Recent detection

limits utilized at MW-5-MDCI on the L-P site, where high concentrations of pentachlorophenol exist and TCE was previously detected, are even higher, at either 5.0 or 10.0 ppb.

g. Additionally, on the map included as Exhibit B to the Amador Decl., shallow groundwater monitoring well results indicate that TCE is or has been present at concentrations ranging from 1.0 to 4.6 ppb. These levels are very close to and in most cases exceed shallow groundwater concentrations of TCE detected either upgradient or downgradient of the L-P facility. In particular, TCE at a concentration in excess of 1.0 ppb has been consistently detected in L-P's shallow monitoring wells MW8-MDDT and MW-9-MDEB, while other upgradient, cross-gradient and downgradient L-P wells screened in the same shallow interval do not show detectable TCE during any of the same quarterly sampling events. These results indicate the possibility that a localized TCE source exists in this area.

h. There appears to be an inconsistent investigative approach by the Department in determining potential source areas for the TCE found in groundwater at similar concentrations beneath these two sites. At the Victor Industries Property, the Department required or conducted extensive soil gas, soil and groundwater investigation, despite the fact that monitoring wells located at this property contain only low levels of TCE/PCE. Despite this extensive investigation, no existing source of contamination has been identified at the Victor Industries Property. On the other hand, at the L-P site, where TCE also is found in shallow groundwater and solvent has been found in soil, the Department apparently has not required collection of soil samples from depths near the water table to determine whether an onsite source exists.

14. I have reviewed the Supp. Riddle Decl. submitted by the Department in support of its reply brief. Based on my

knowledge of the investigation and my review of the reports relied upon by Mr. Riddle, I believe that declaration contains a number of factual inaccuracies, as follows:

a. With respect to Mr. Riddle's statements in I 12(c) that groundwater flow is to the southwest, the groundwater elevation map prepared by CH2M Hill for L-P and attached as Figure 2-3 of Exhibit D to the Amador Decl. indicates that groundwater also flows across the L-P site in a southeast and south direction.

b. With respect to Mr. Riddle's statements in $ 12(e) that a Hydropunch sampling at 120 feet below ground surface immediately downgradient of the Victor Industries Property showed the presence of TCE, my review of supporting Exhibit J indicates that the deepest Hydropunch sample obtained between the Victor Industries Property and the L-P site was taken at a depth of 103 feet from SE-8, and that that sample did not contain detectable levels of TCE.

c. With respect to Mr. Riddle's statements in ¶ 12(b) regarding upgradient contamination, there is currently no groundwater monitoring well upgradient of the Victor Industries Property. The one shallow monitoring well referred to by Mr. Riddle was installed by VIC, Inc.'s consultant in 1989 and was destroyed on August 9, 1991. That well provided limited sampling data

d. With respect to Mr. Riddle's statements in ¶ 13(e) that TCE is encountered in the deep zone on the L-P property directly beneath the intermediate zone where the highest concentration of TCE has been detected, there are insufficient monitoring wells, in my opinion, to draw this conclusion. Moreover, sample results from monitoring wells VMW-11b and VMW-11c on the L-P property indicate that this statement is inaccurate. Similarly, Mr. Riddle's statement that TCE was detected in the soil at the Victor Industries Property at 207,000 ppb is incorrect. That single sample was

obtained from an iron ring encrusted with black material located beneath the surface of the property, as discussed further in the original Riddle Decl., and was not representative of soil contamination. The source of the black substance is unknown, but the material is suspected to be a residual from the prior use of the property by the Southern Pacific Railroad it is my opinion that the black material and ring were not a source of TCE contamination to groundwater because (1) the material, which has been removed, was located near the surface and would not have come in contact with groundwater and (2) soil samples collected at depths of 4, 11 and 14 feet from soil boring BC-1, located near where the ring was discovered and near the alleged solvent disposal, did not contain TCE.

e. With respect to Mr. Riddle's statements in ¶ 16 regarding residential well use in the Stanley Park neighborhood, the leading edge of the "plume" is not

downgradient of Stanley Park. Monitoring wells VMW-12a, VMW-12b and VMW-12c, located at the southwest edge of Stanley Park, are all non-detect for TCE. Mr. Riddle's statement that a groundwater extraction system will result in increased TCE concentrations in individual residential wells also is not supported by any facts. Based on BCC conversations with individuals living and working in this area, it is my understanding that agricultural pumping near Stanley Park has increased, yet the recent Stanley Park sampling data, as discussed below, show a generally flat to decreasing level of TCE contamination in individual wells.

f. With respect to Mr. Riddle's statements in ¶ 17 that pumping of Stanley Park wells increases the spread of contamination from the L P property, I do not believe that residential wells, which typically pump at 12 gallons per minute or less, will influence the groundwater flow at the L-P facility, where localized production well pumping may be

capturing much of the flow from L-P to Stanley Park.

g. With respect to Mr. Riddle's statements in ¶ 19 regarding the effectiveness of Point-Of-Entry-Treatment-Systems ("POETS"), the use of carbon treatment for TCE contamination, which is the treatment process employed by the POETS installed in the Stanley Park neighborhood, is a widely-accepted practice, as evidenced by the Department's own purchase and use of larger carbon units to treat volatile organic compounds in municipal wells in the Chico area. Based on contaminant concentrations and regular testing of POETS, it is possible to model with confidence "breakthrough curves" which will indicate when carbon filters in the POETS must be changed to avoid human exposure. In connection with the Stanley Park POETS, BCC selected the well with the highest TCE concentration, located at 1602 Diamond, as indicative of the earliest possible breakthrough of contaminants and has sampled this well on a regular basis.

Results from this sampling and analysis indicate that no breakthrough has occurred. These results previously have been provided to Gene Riddle in Quarterly and Monthly reports submitted to the Department by BCC. True and correct copies of these reports are attached as Exhibit B hereto.

15. After submitting my declaration in support of Defendants, opposition, I received additional data related to the recent sampling of private wells in the Stanley Park Subdivision, which was not previously available. The complete sampling data, a summary of which is attached hereto as Exhibit C, indicate that the number of wells with volatile organic compounds, including TCE, has remained virtually unchanged since 1991. Additionally, I have now received and reviewed influent sampling data from the ten wells in the Stanley Park Subdivision on which BCC has previously installed POETS. These results can be summarized

as follows:

Location	TCE Concentrations (ppb) 1991	1992	1993	Well Depth (ft/bgs)
(Wells On Which POETS Have Been Installed)				
1602 Diamond	10.9	14.0	5.3	112 to 155
1608 Diamond	13.5/3.6	10.0	5.4	80 to 160
1617 Diamond	6.0	13.0	8.2	? to 150
1303 Marian	8.1	12.0	7.9	131 to 137
1318 Orchard	2.1	5.3	2.5	76 to 140
1330 Orchard	5.0	12.0	9.0	62 to 114
1332 Orchard	5.7	8.5	1.6	? to 125
1340 Orchard	5.3	9.0	1.4	80 to 137
1345 Orchard	6.7	10.0	5.6	72 to 115
1360 Orchard	4.6	5.5	4.9	56 to 114
(New Wells Over The MCL)				
1346 Orchard	4.0	4.9	6.3	52 to 112
1382 Orchard	3.5	4.3	5.9	95 to 142

Thus, virtually all wells for which POETS previously have been installed show a decline in influent TCE, and currently only eight wells exceed the Maximum Contaminant Level for TCE, which constitutes no increase in wells exceeding the

MCL of 5.0 ppb since 1991. The highest TCE reading in the Stanley Park area has declined from 14.0 ppb to 9.0 ppb. The shallow aquifer in this area exists at approximately 20 to 50 feet below ground surface, the thin intermediate aquifer exists at approximately 90 to 100 feet below ground surface and the deep aquifer exists at approximately 110+ to 180 feet below ground surface. Therefore, all of the wells in Stanley Park where TCE has been detected above the MCL at one time or another appear to be drawing water from the intermediate and/or deep zone.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Date: July 21, 1993 /s/ Jay Lucas

JAY LUCAS